

FIG. 1A

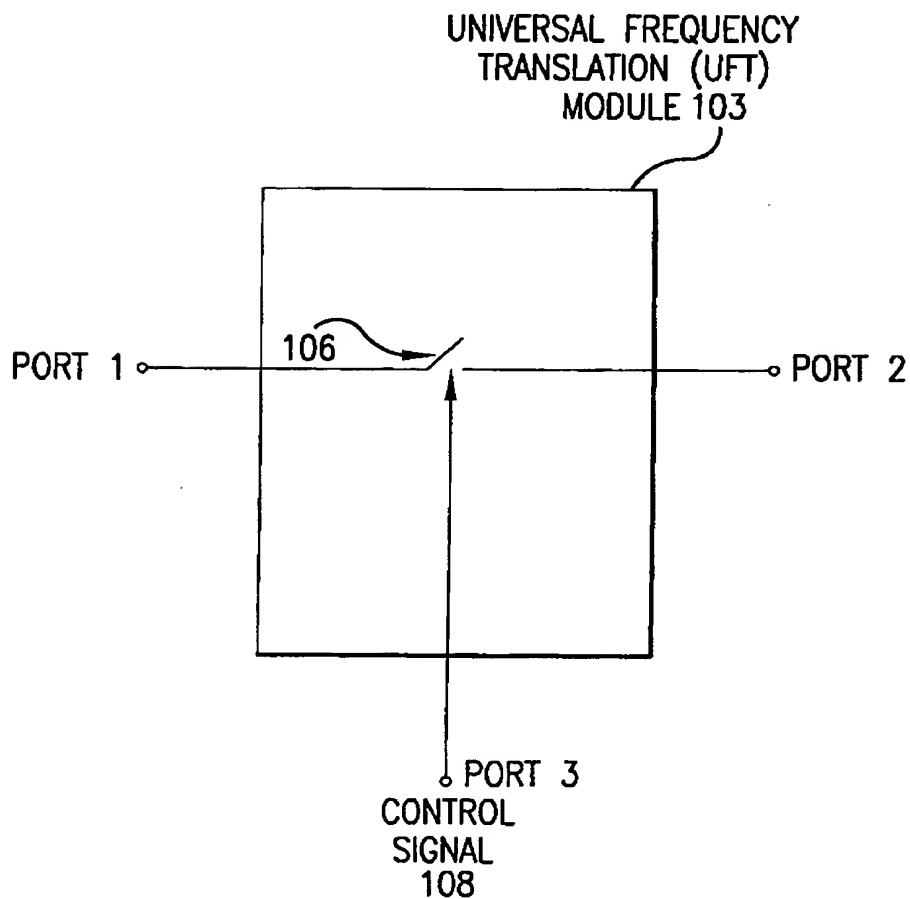


FIG. 1B

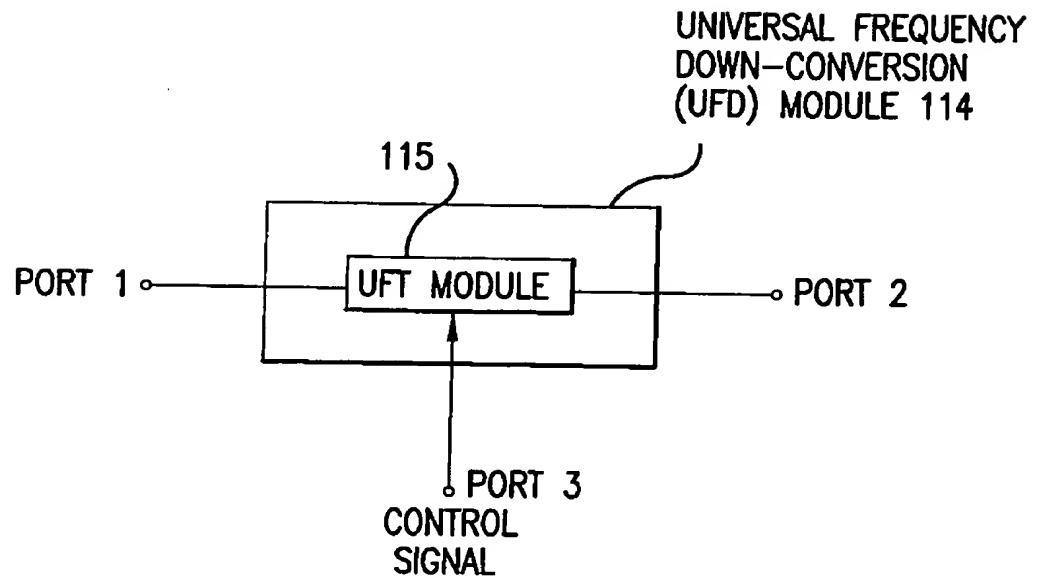


FIG. 1C

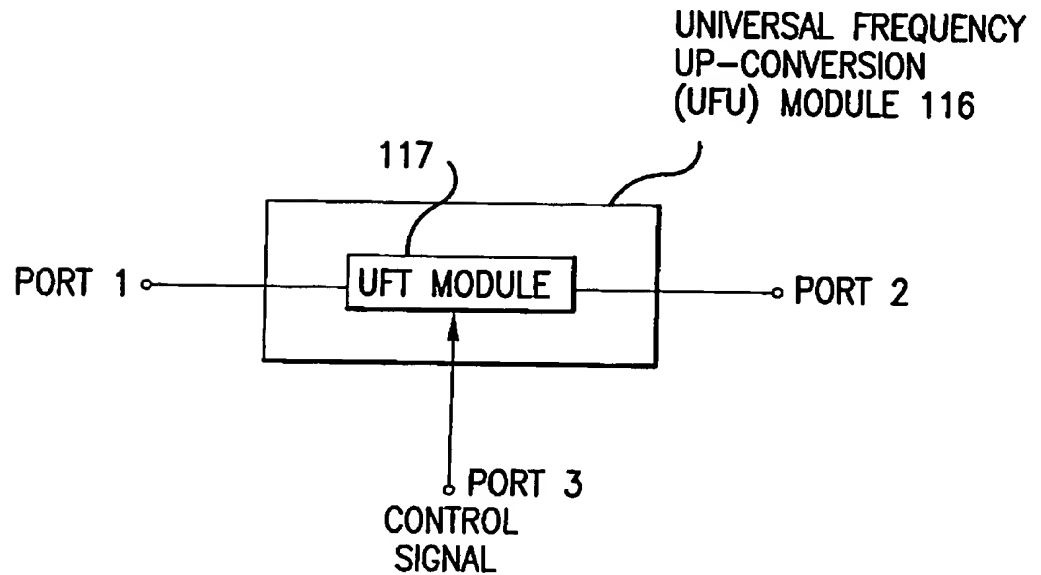
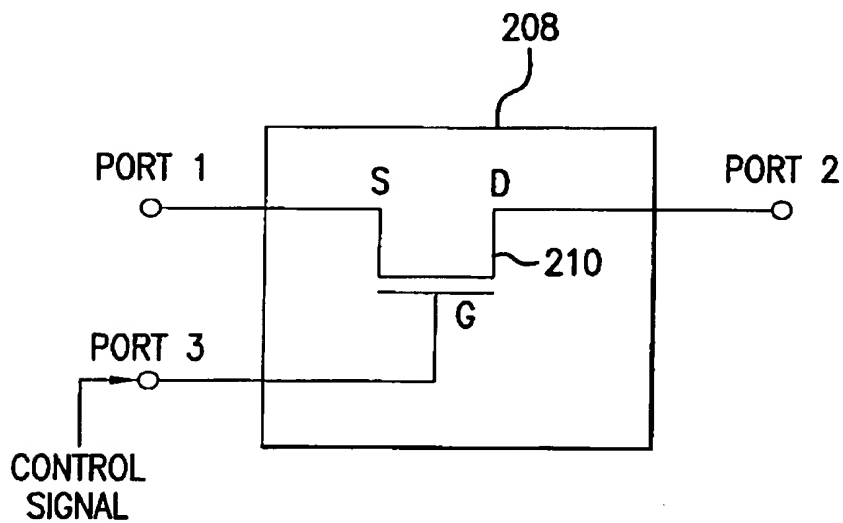
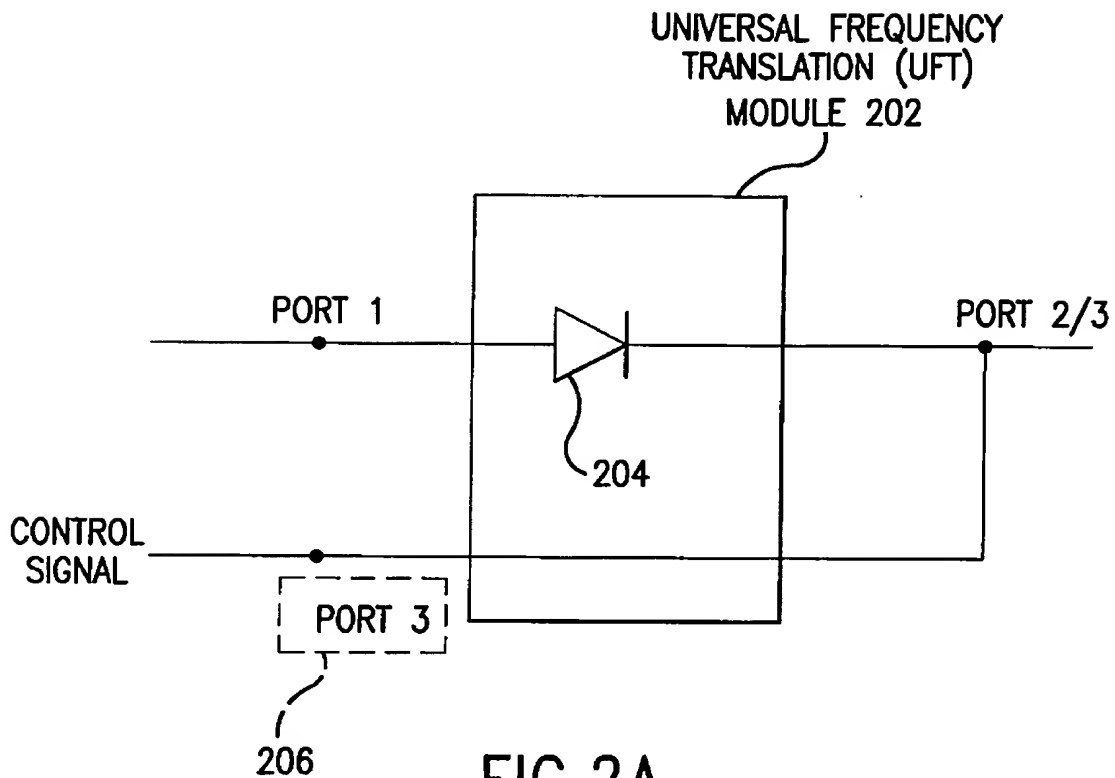


FIG. 1D



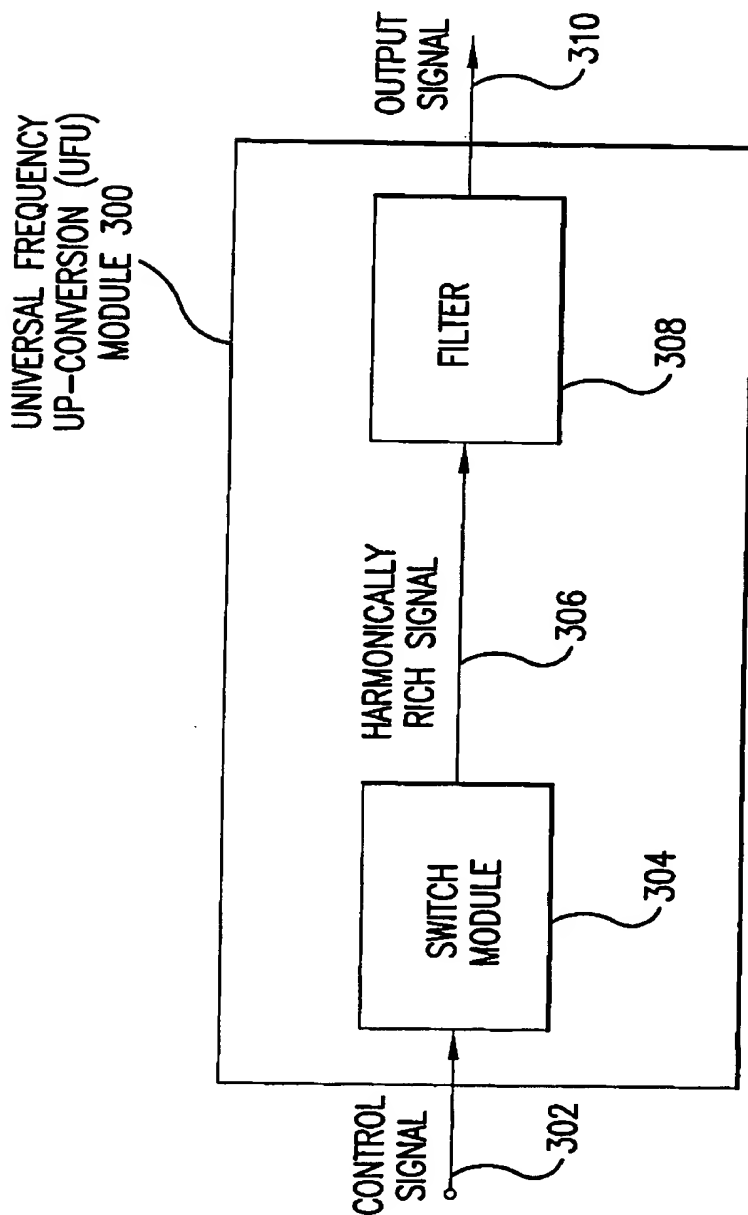


FIG. 3



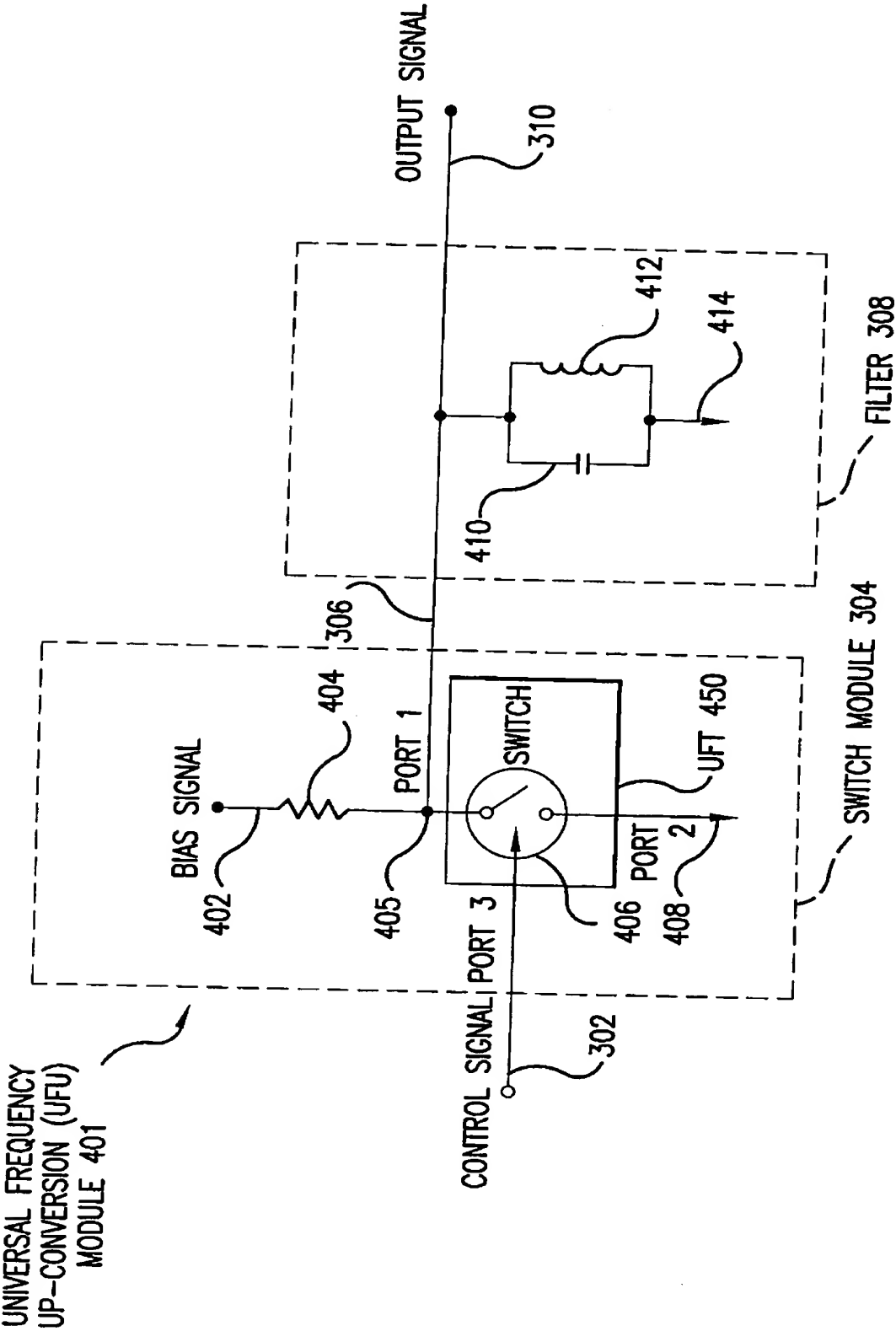


FIG. 4

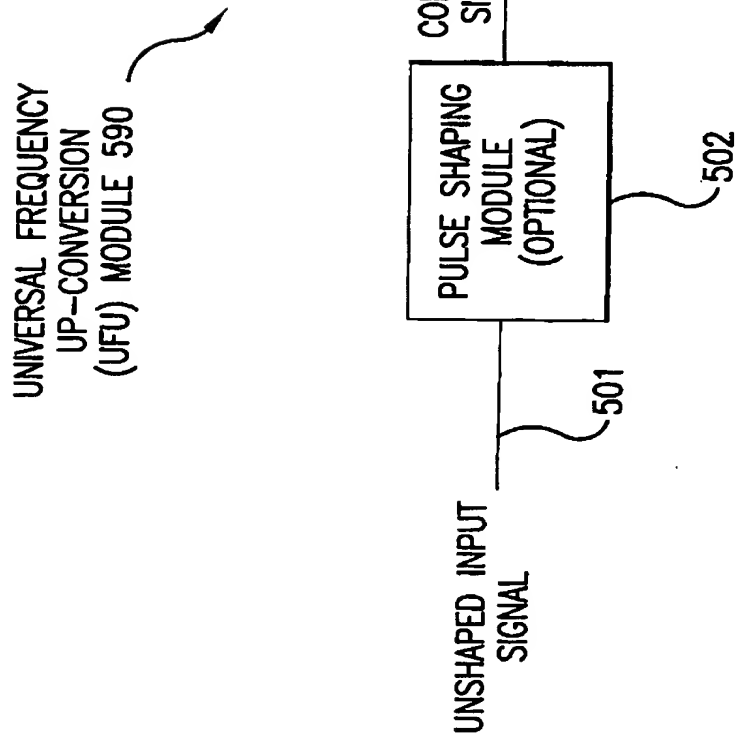
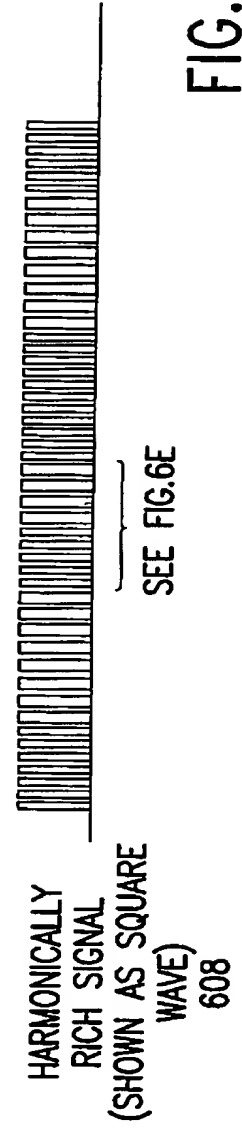
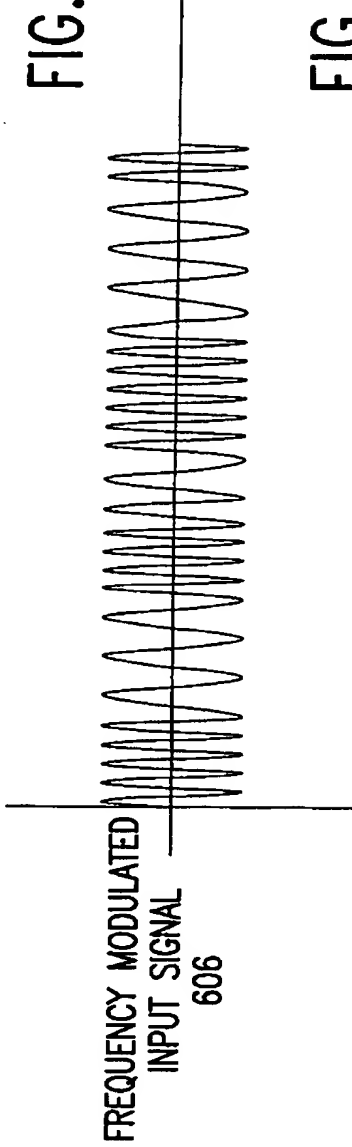
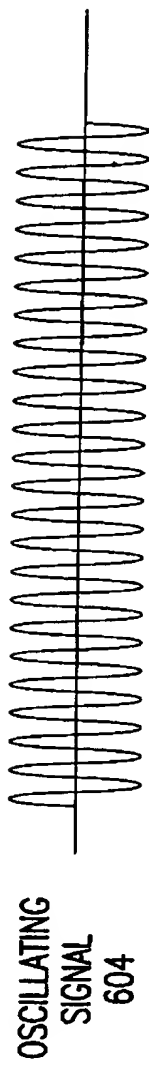
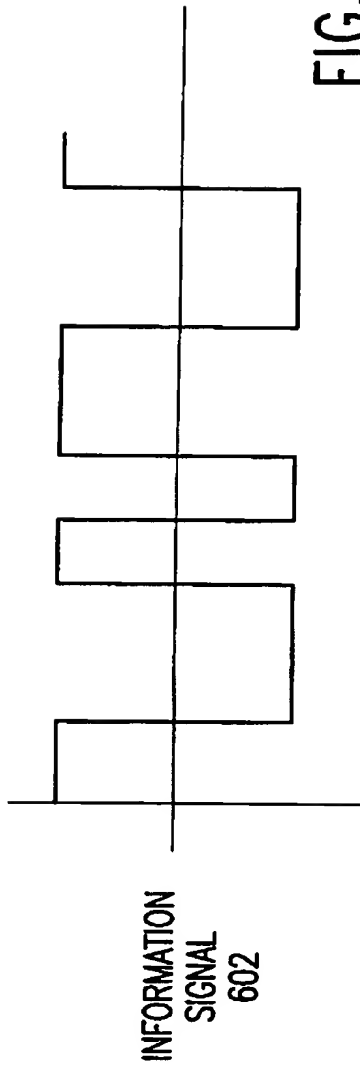
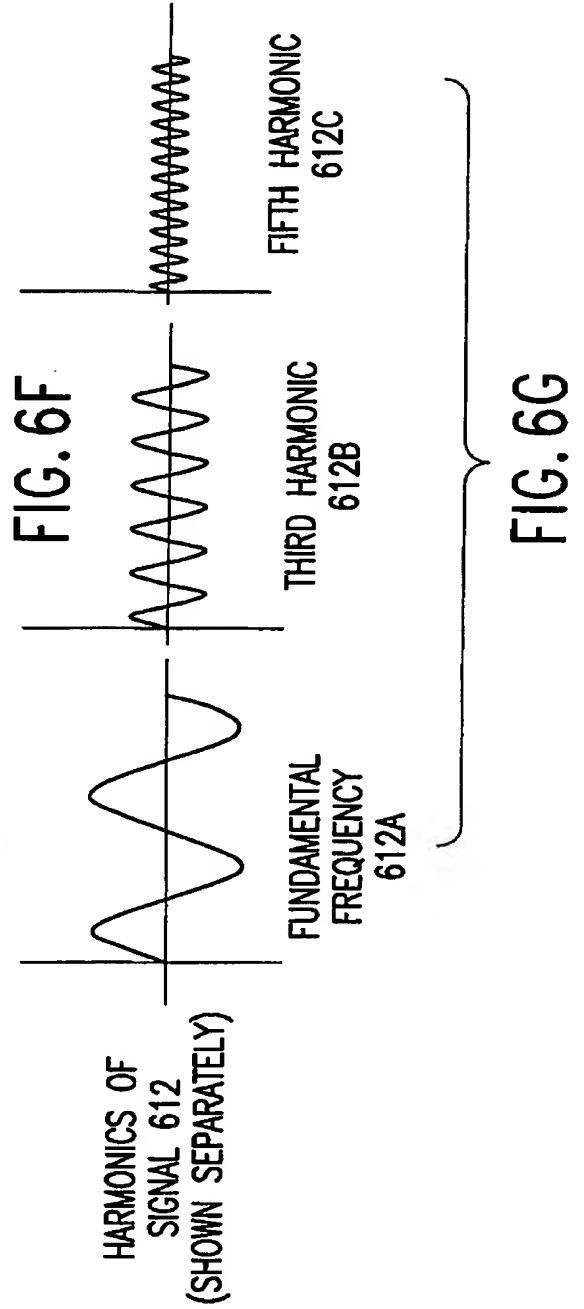
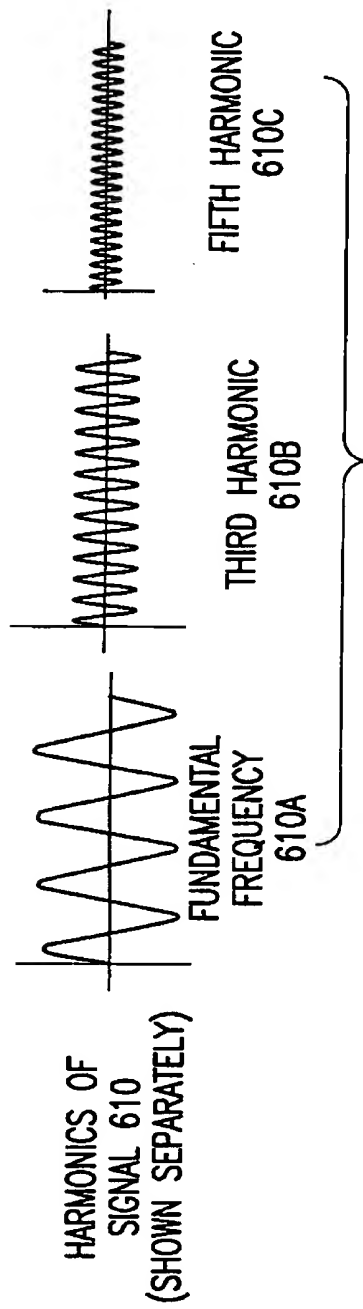
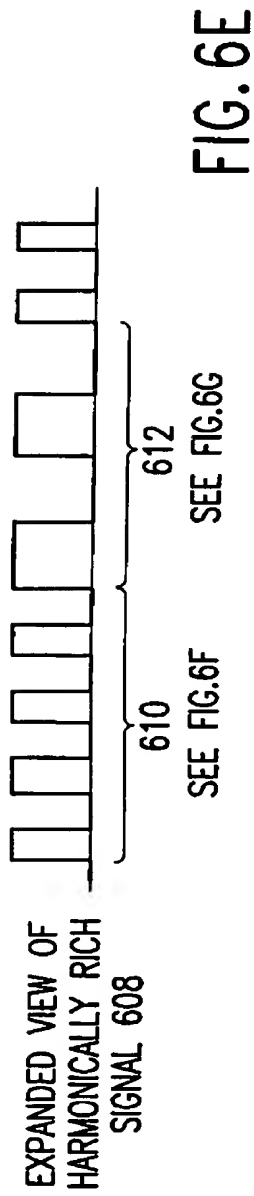
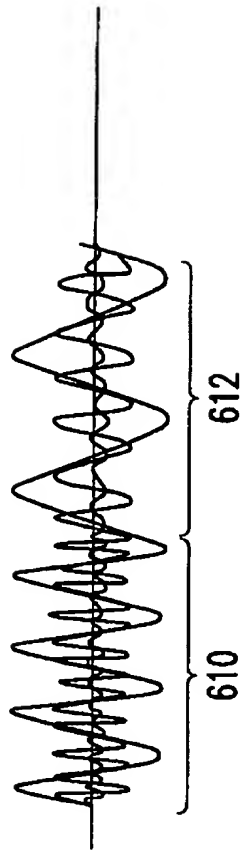


FIG. 5







HARMONICS OF  
SIGNALS 610 AND  
612  
(SHOWN SIMULTANEOUSLY  
BUT NOT SUMMED)

FIG. 6H

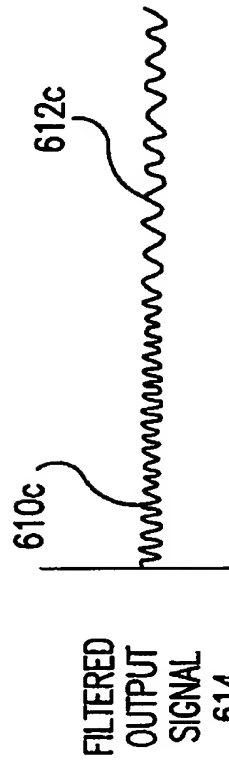


FIG. 6I

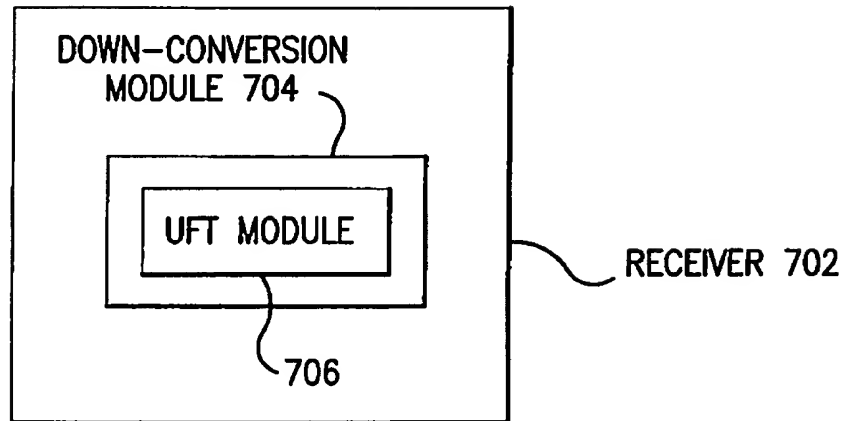


FIG. 7

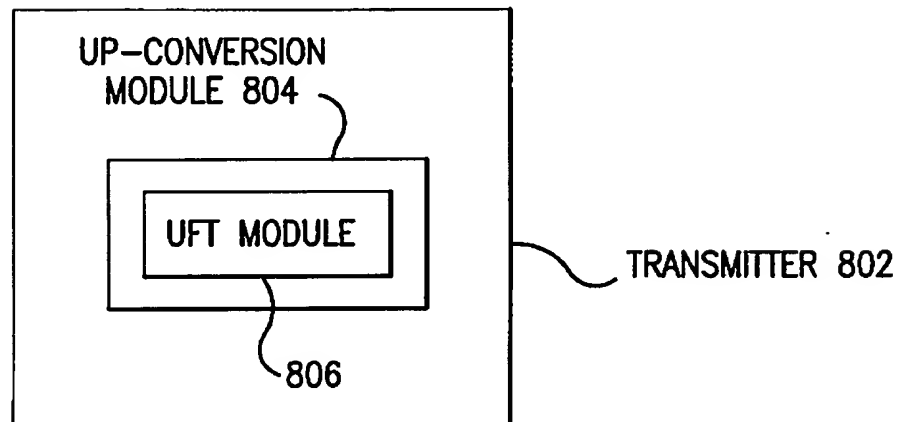


FIG. 8

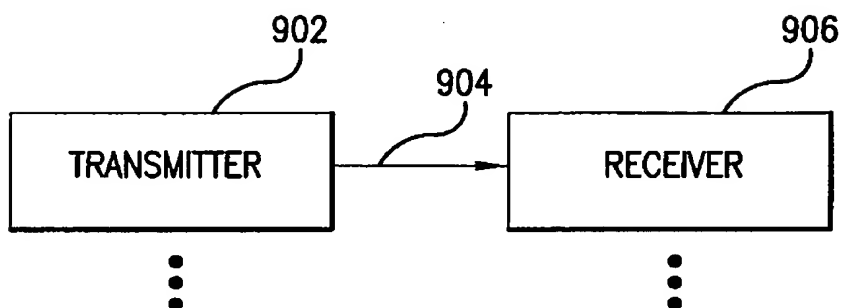


FIG. 9

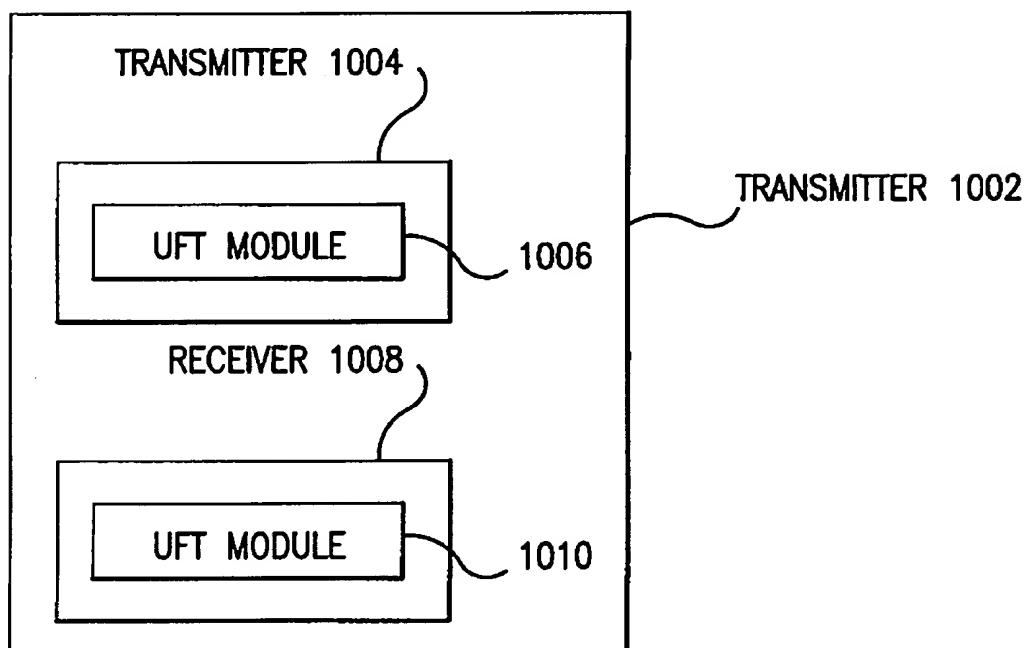


FIG. 10

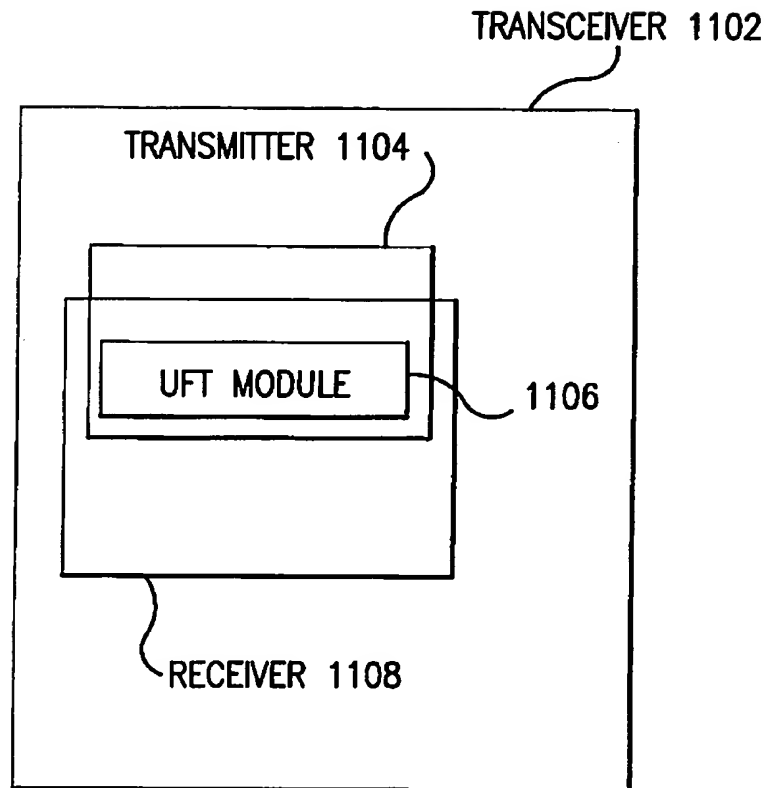


FIG. 11



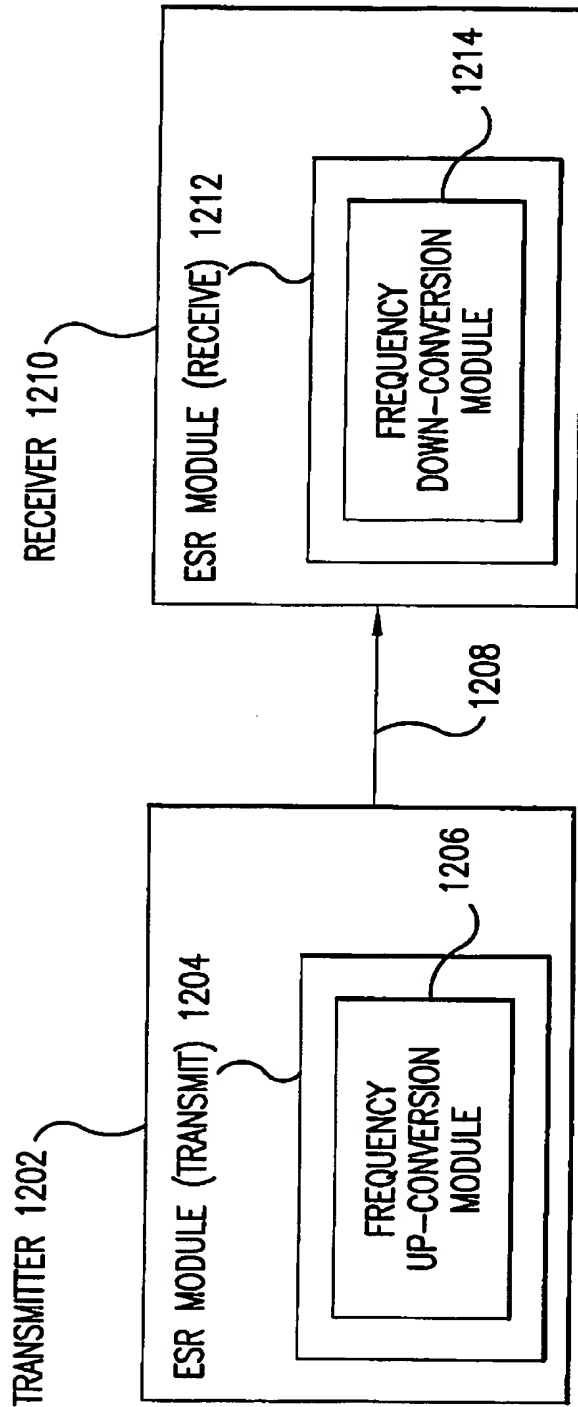


FIG. 12

UNIFIED DOWN-CONVERTING  
AND FILTERING (UDF) MODULE 1302

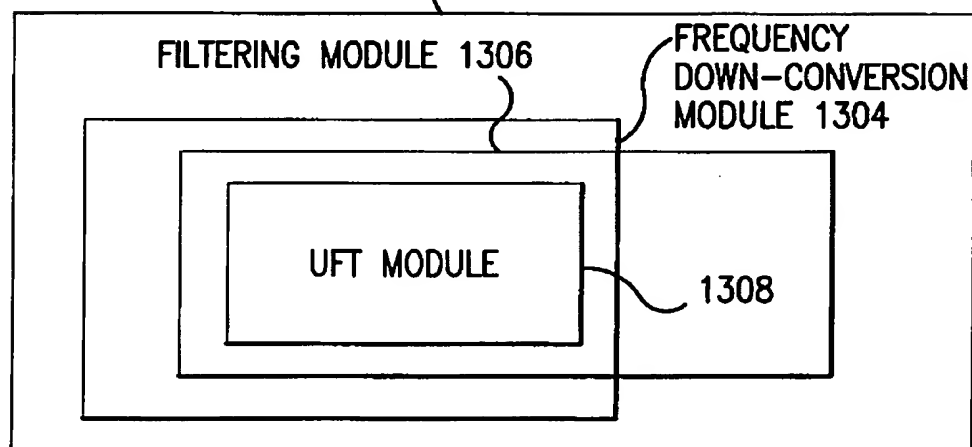


FIG. 13

RECEIVER 1402

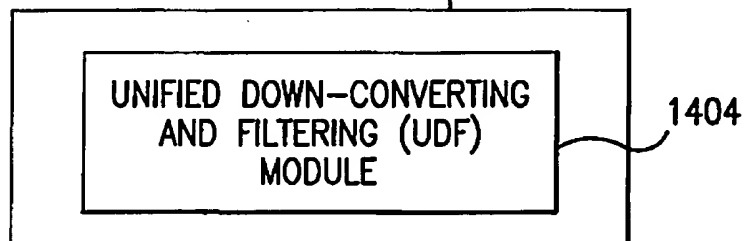


FIG. 14

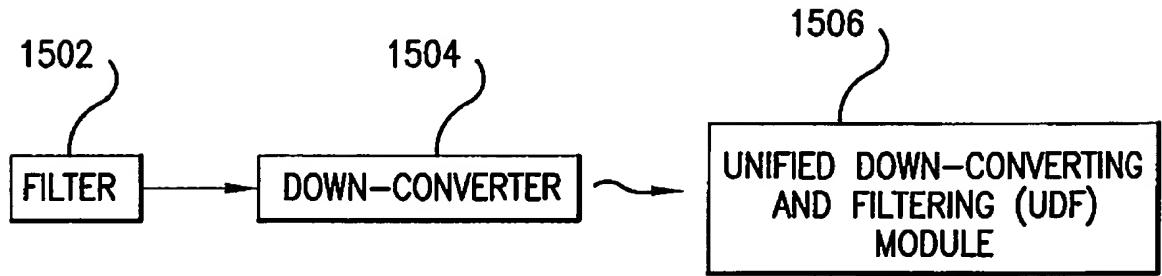


FIG. 15A

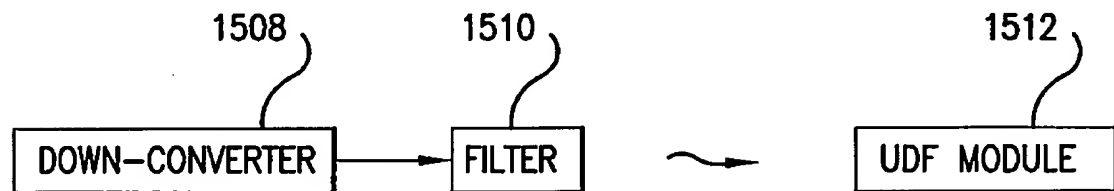


FIG. 15B

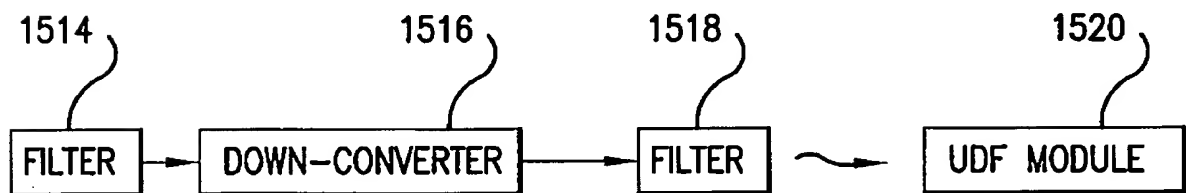


FIG. 15C

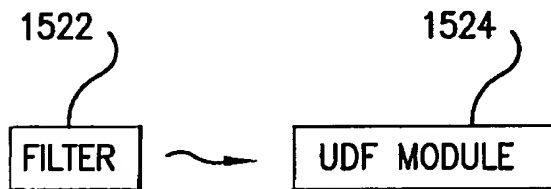


FIG. 15D



FIG. 15E

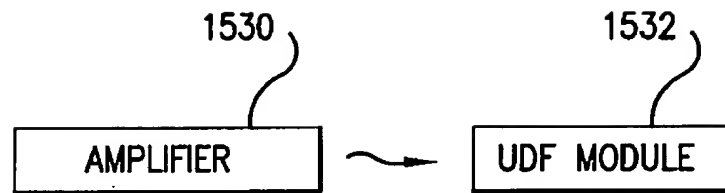


FIG. 15F

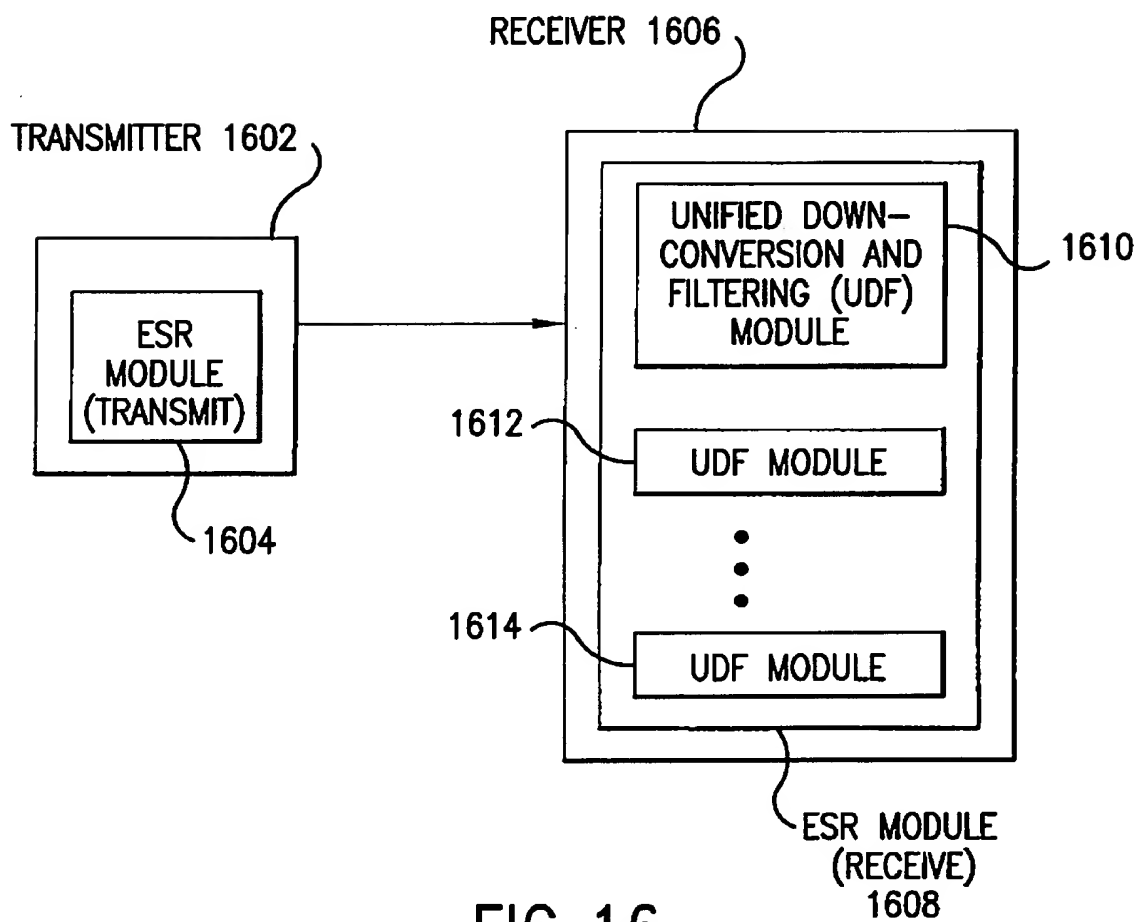


FIG. 16

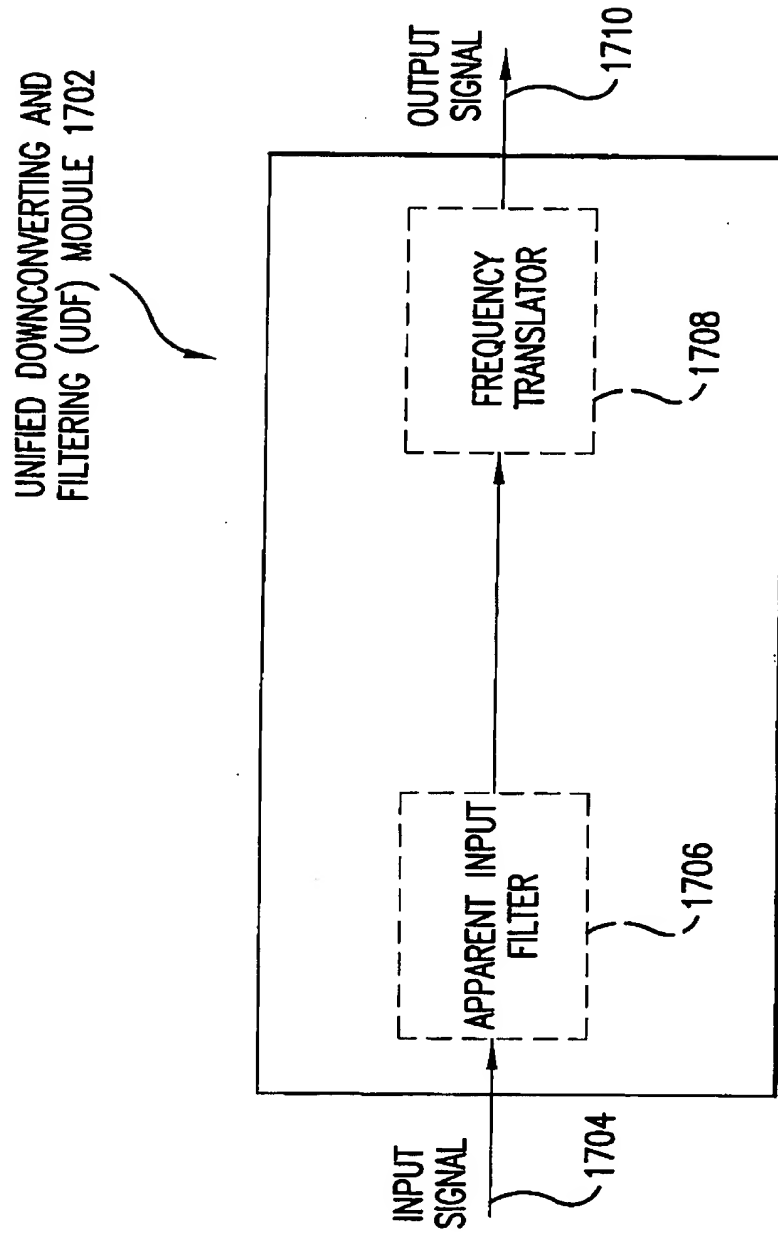


FIG. 17

TIME NODE	t-1 (RISING EDGE OF $\phi_1$ )	t-1 (RISING EDGE OF $\phi_2$ )	t (RISING EDGE OF $\phi_1$ )	t (RISING EDGE OF $\phi_2$ )	t+1 (RISING EDGE OF $\phi_1$ )
1902	$V_{t-1}$ 1804	$V_{t-1}$ 1808	$V_t$ 1816	$V_t$ 1826	$V_{t+1}$ 1838
1904	—	$V_{t-1}$ 1810	$V_{t-1}$ 1818	$V_t$ 1828	$V_t$ 1840
1906	$V_{t-1}$ 1806	$V_{t-1}$ 1812	$V_t$ 1820	$V_t$ 1830	$V_{t+1}$ 1842
1908	—	$V_{t-1}$ 1814	$V_{t-1}$ 1822	$V_t$ 1832	$V_t$ 1844
1910	— 1807	—	$V_{t-1}$ 1824	$V_{t-1}$ 1834	$V_t$ 1846
1912	—	— 1815	—	$V_{t-1}$ 1836	$V_{t-1}$ 1848
1918	—	—	—	—	$V_t$ 1850 $0.1*V_{t-1}$ $0.8*V_{t-1}$

FIG. 18

1802

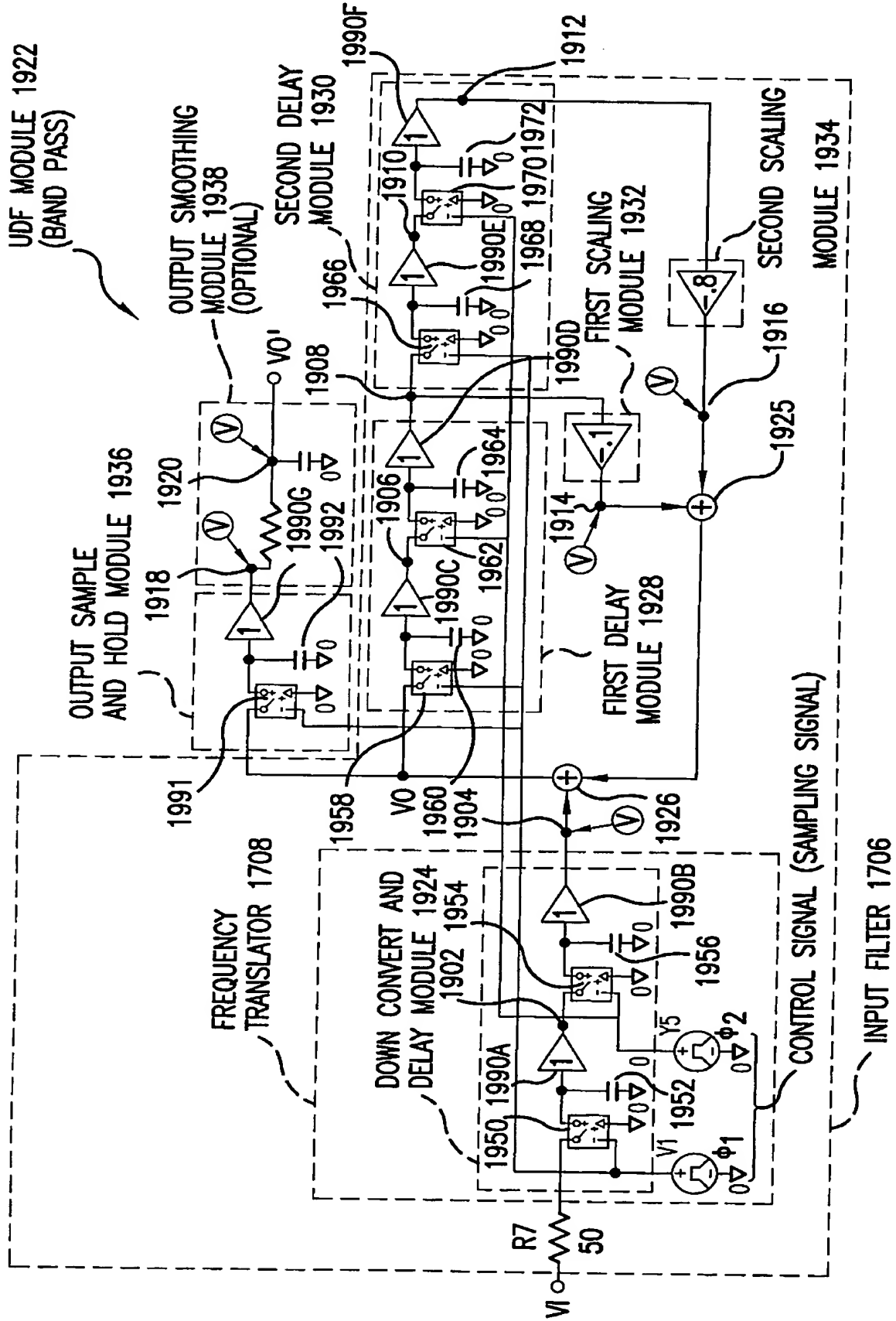


FIG. 19



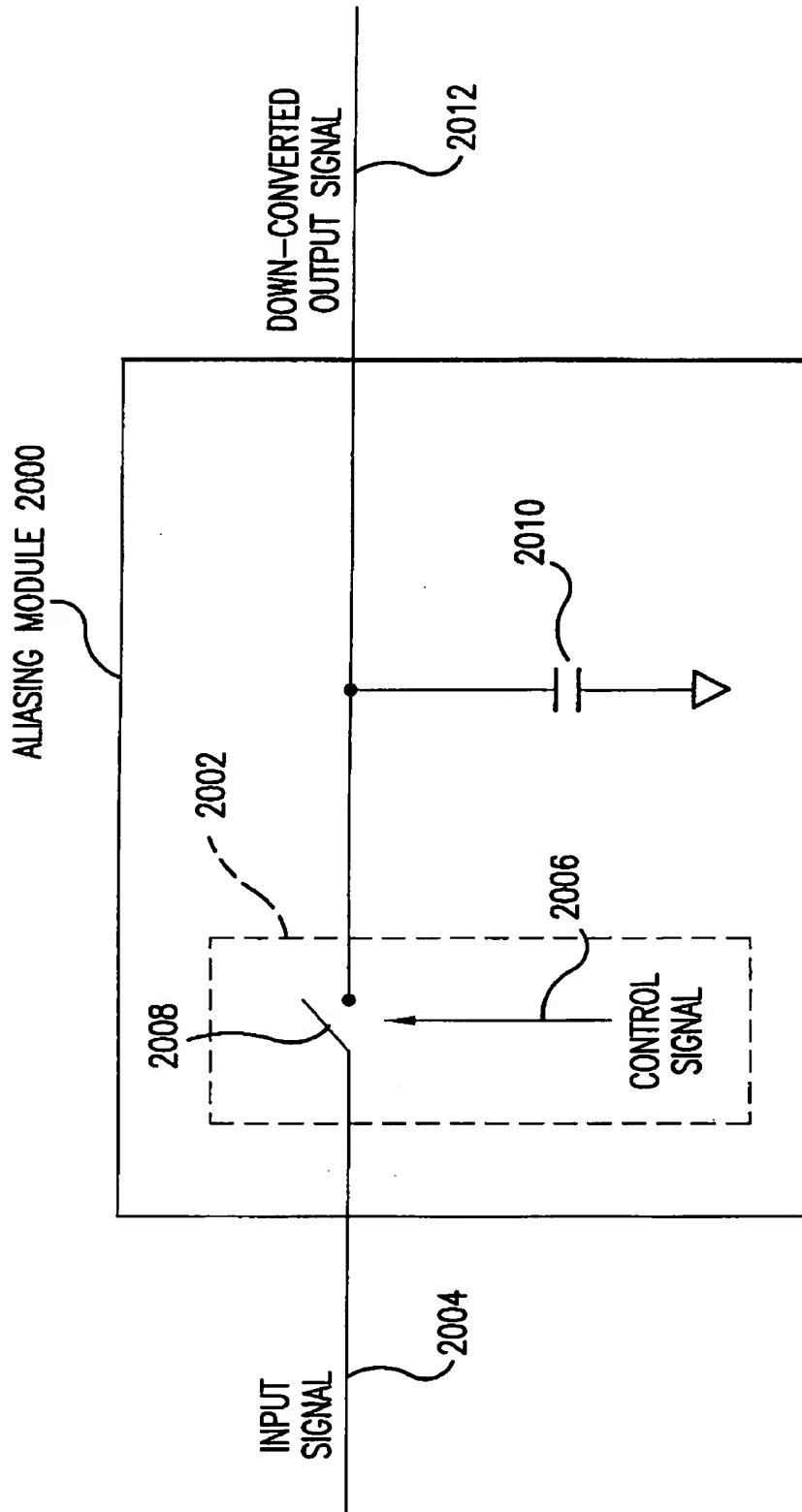


FIG. 20A

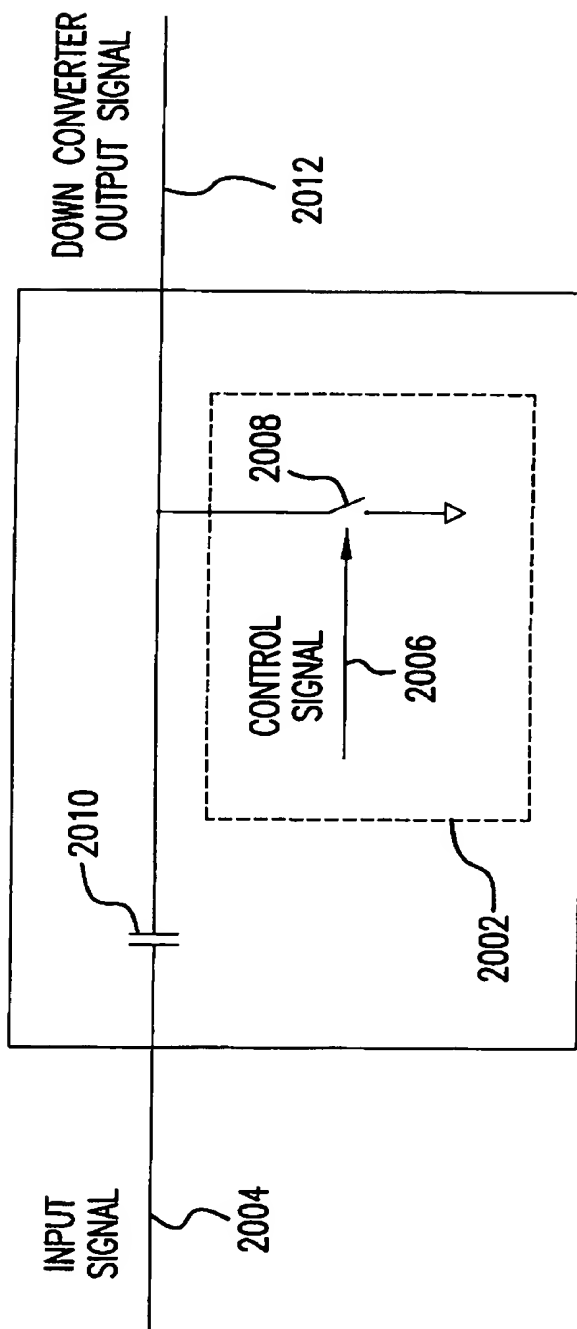


FIG. 20A-1

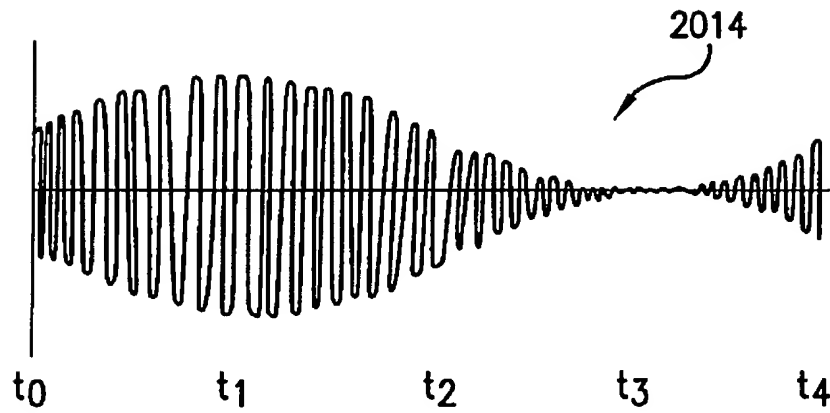


FIG. 20B

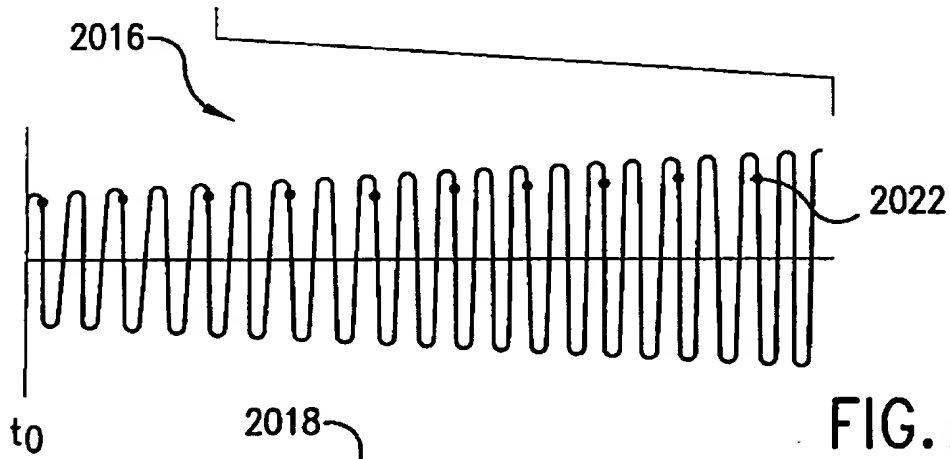


FIG. 20C

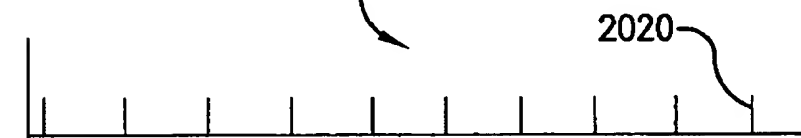


FIG. 20D

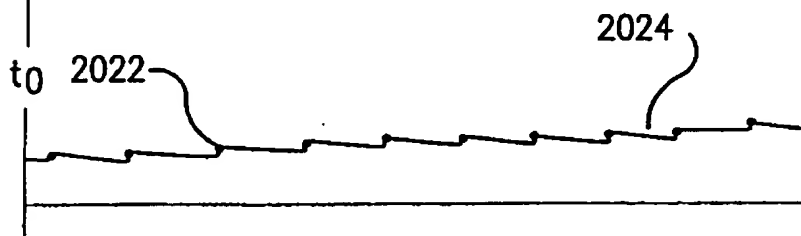


FIG. 20E

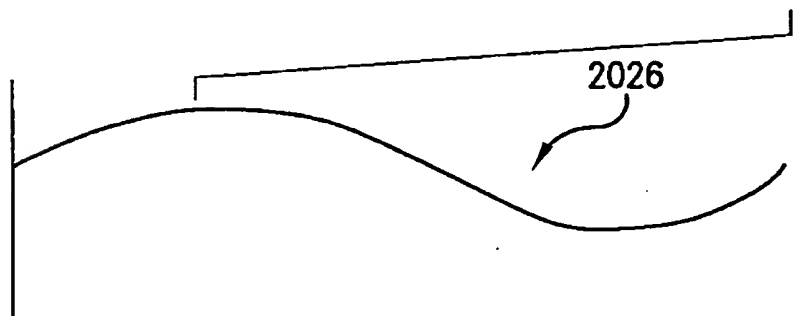


FIG. 20F

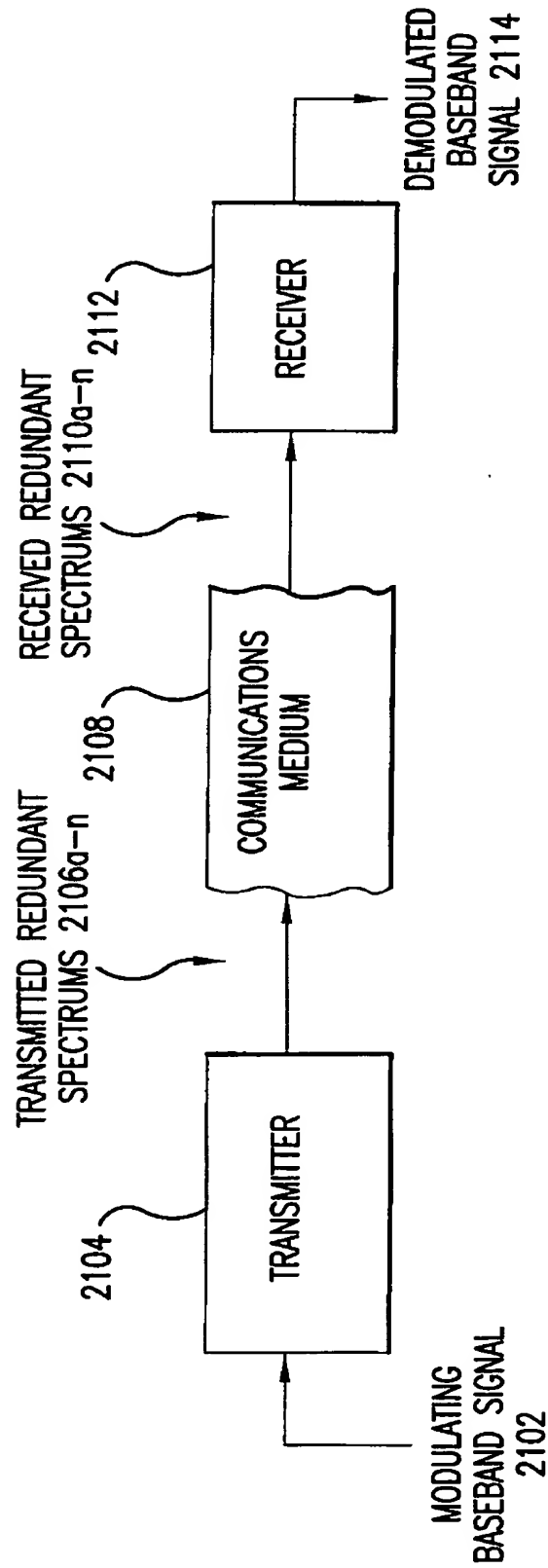


FIG. 21

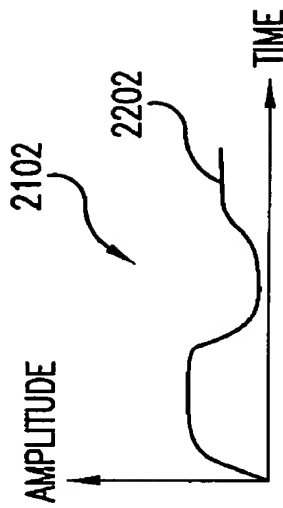


FIG. 22A

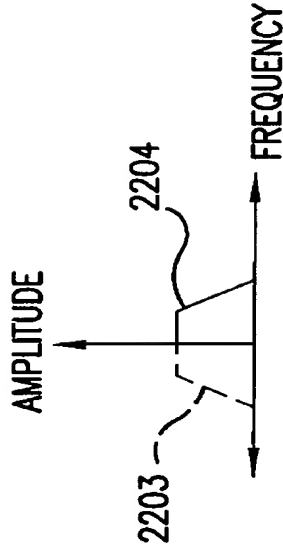


FIG. 22B

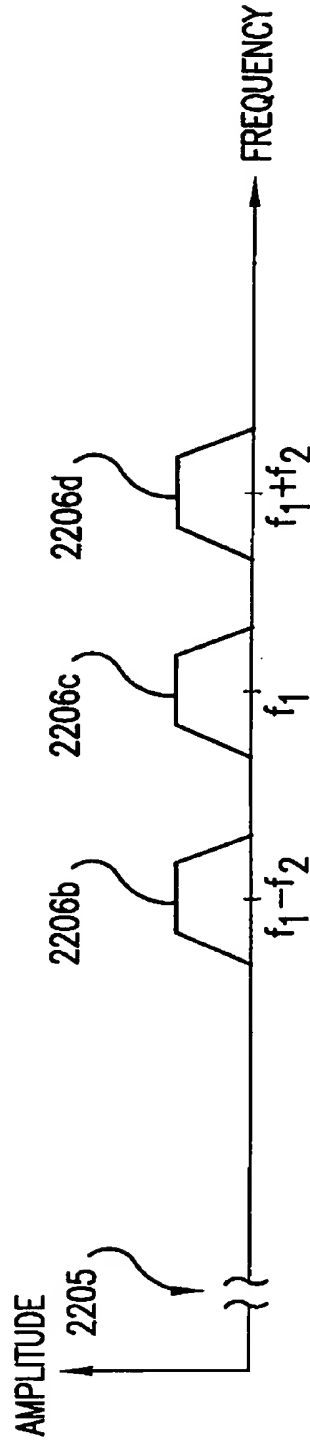


FIG. 22C

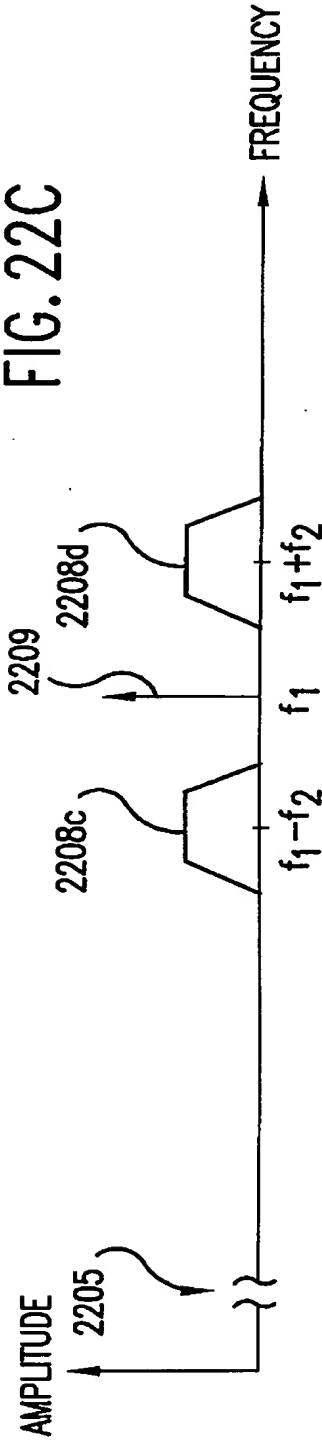


FIG. 22D

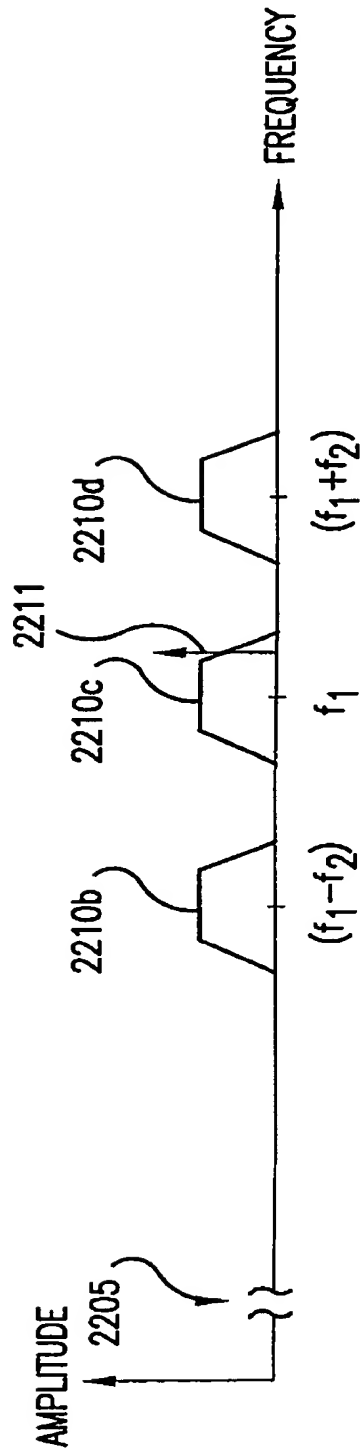


FIG. 22E

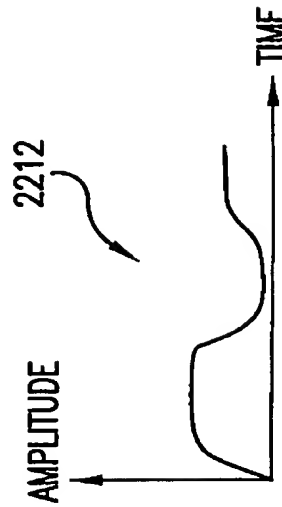


FIG. 22F

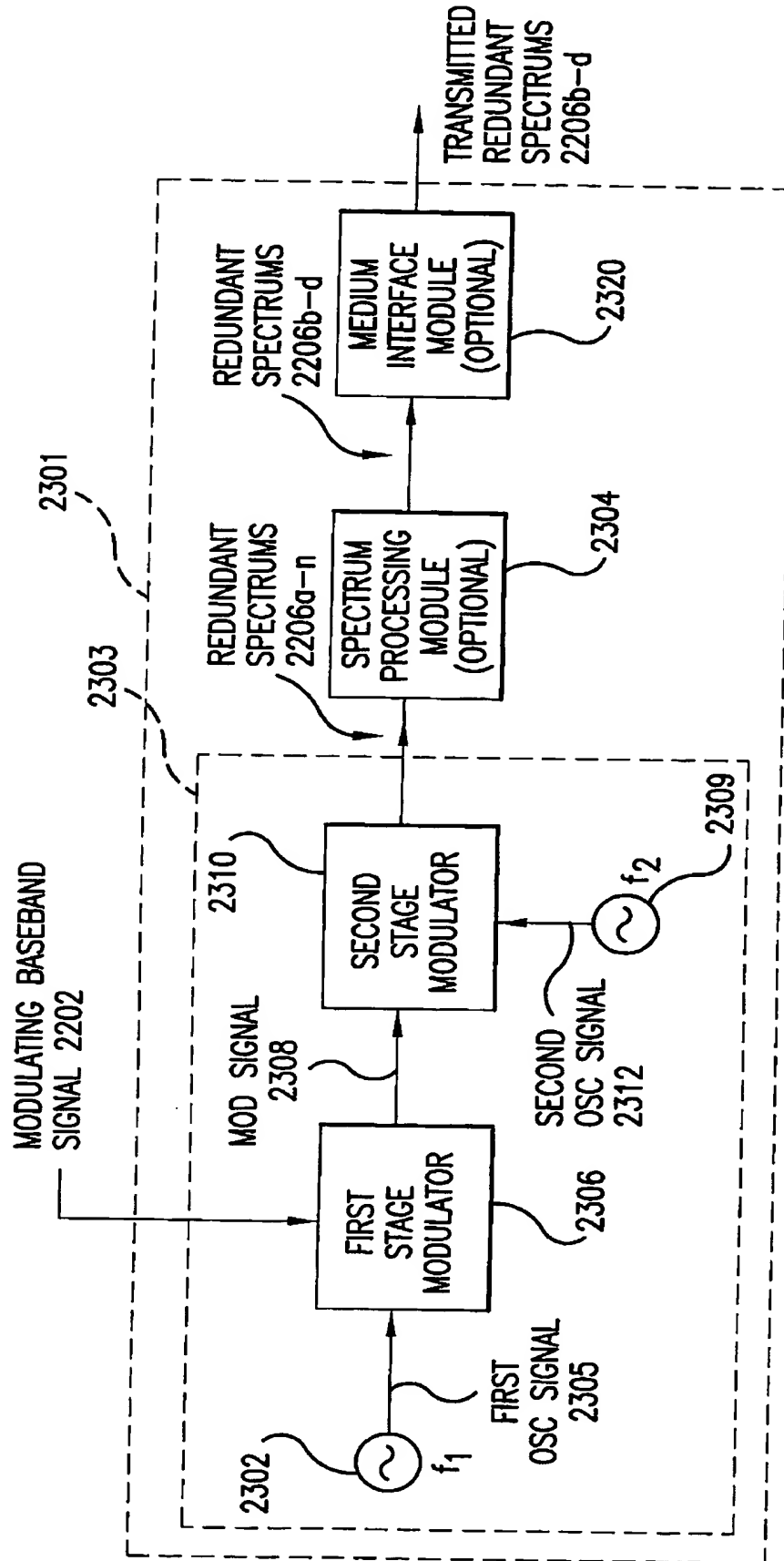


FIG. 23A

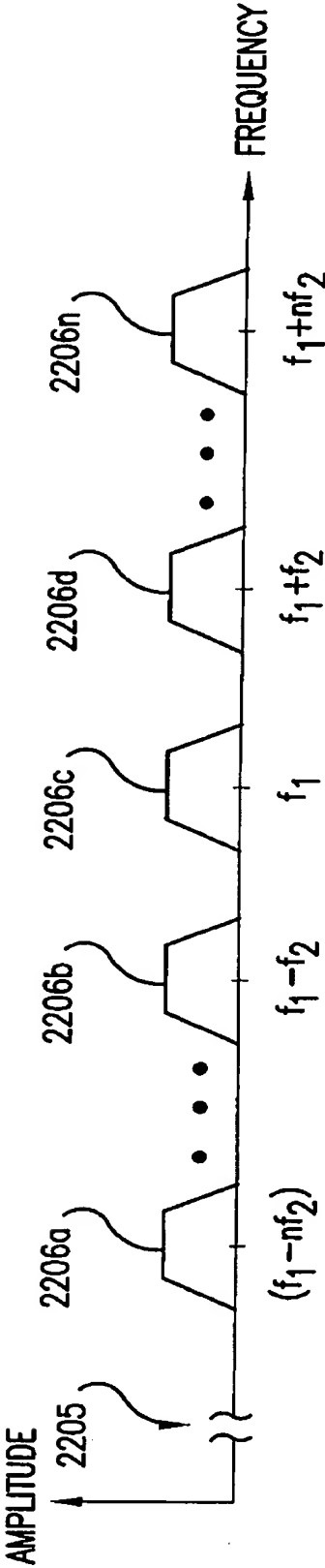


FIG. 23B

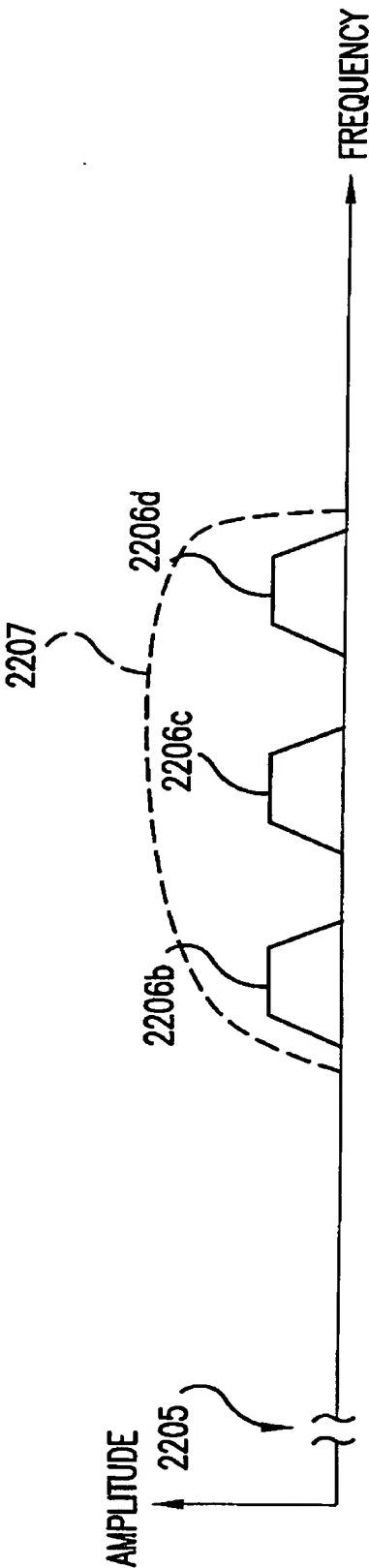


FIG. 23C



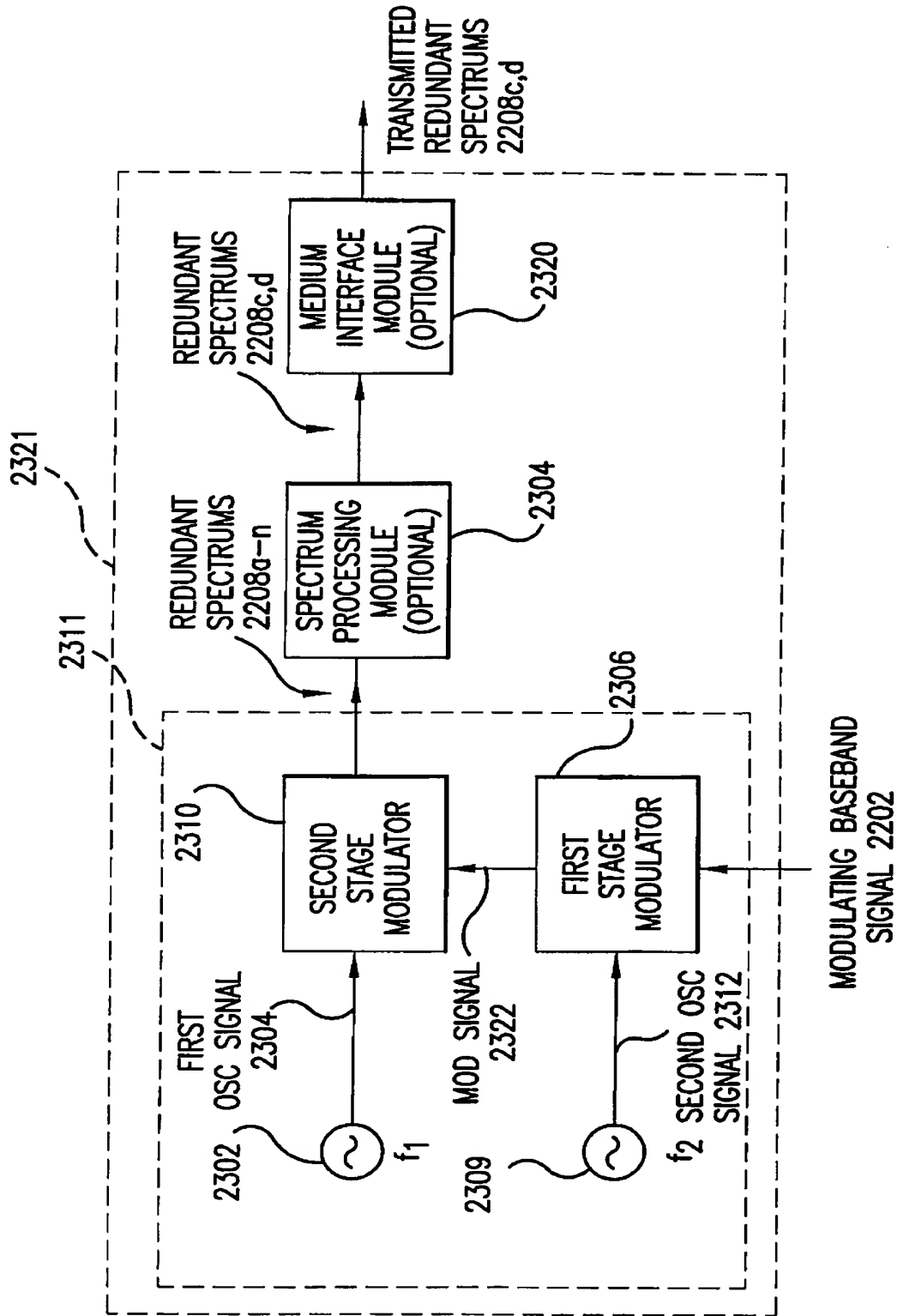


FIG. 23D

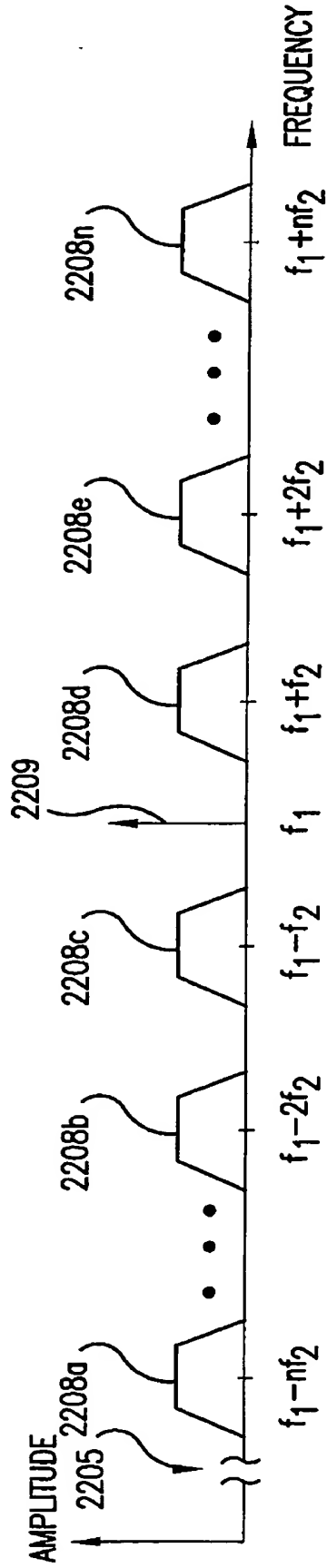


FIG. 23E

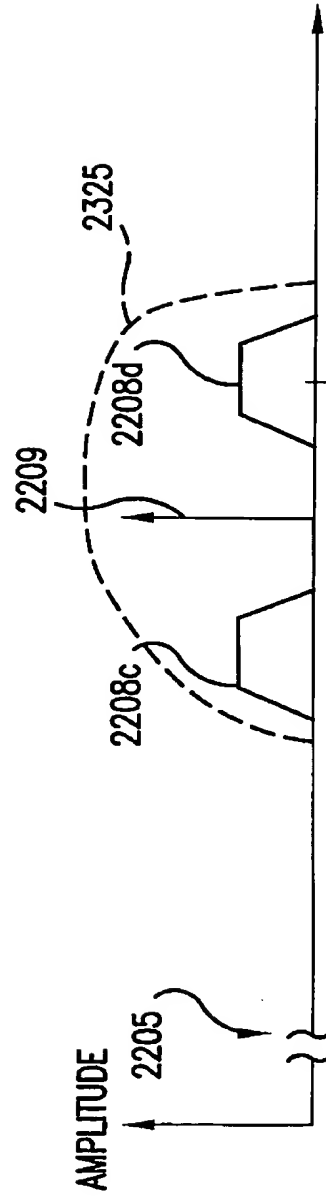


FIG. 23F

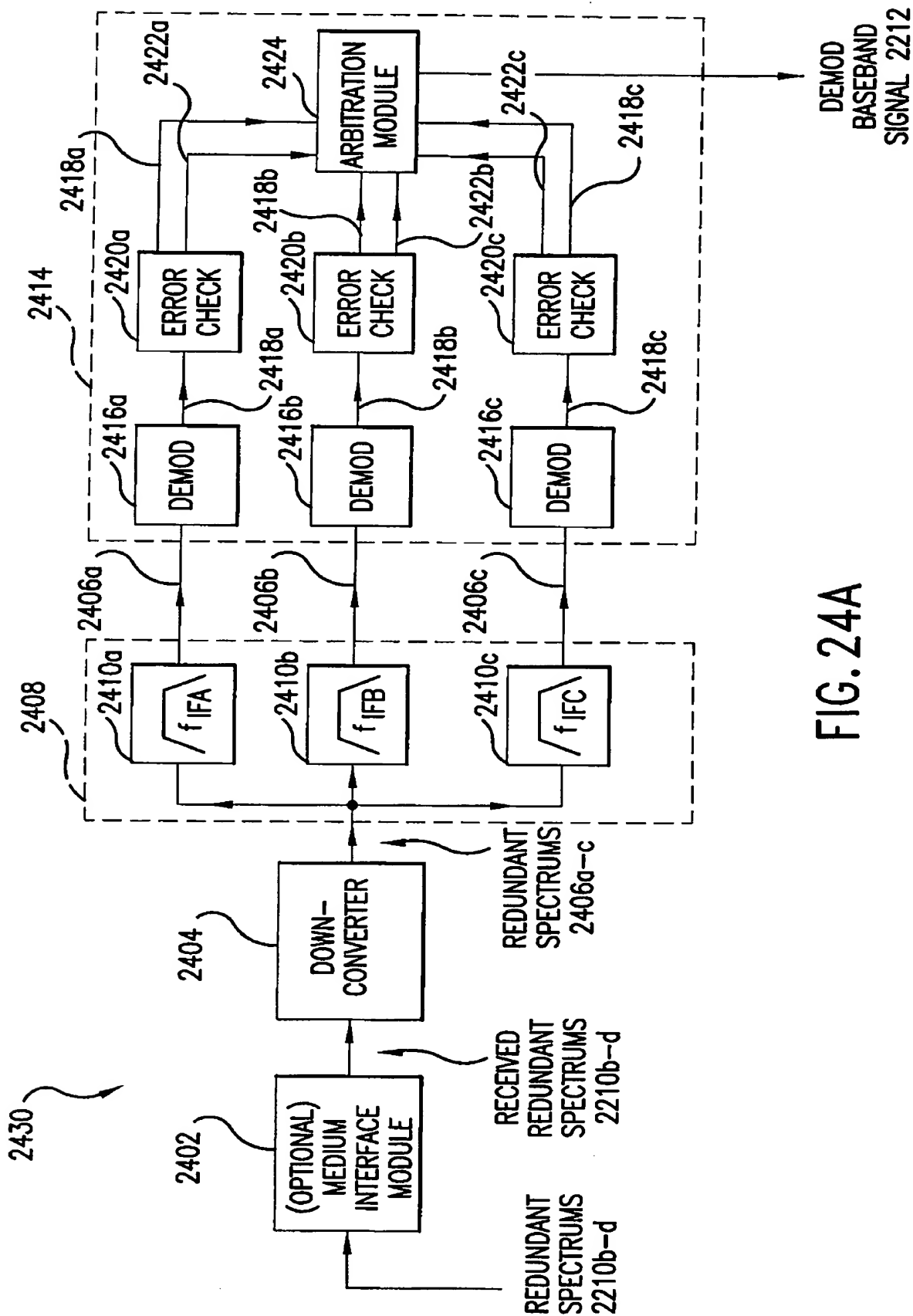


FIG. 24A

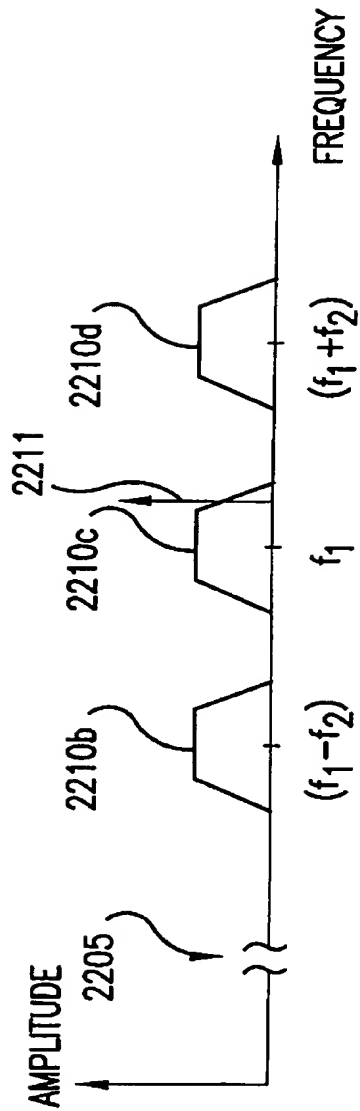


FIG. 24B

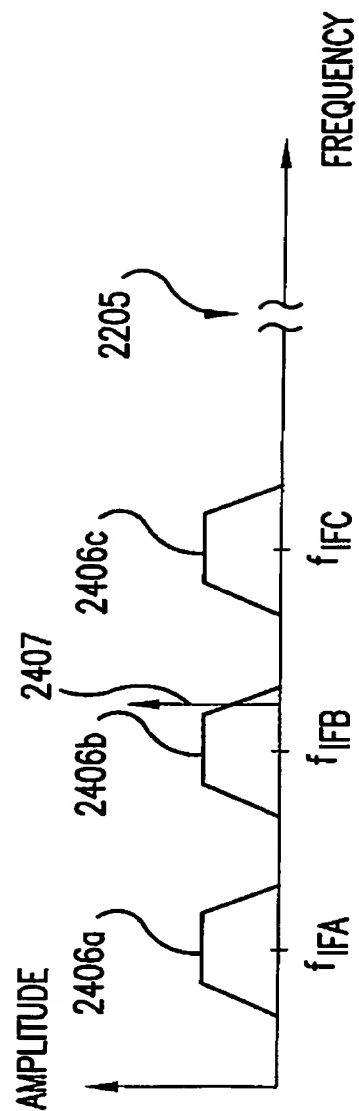
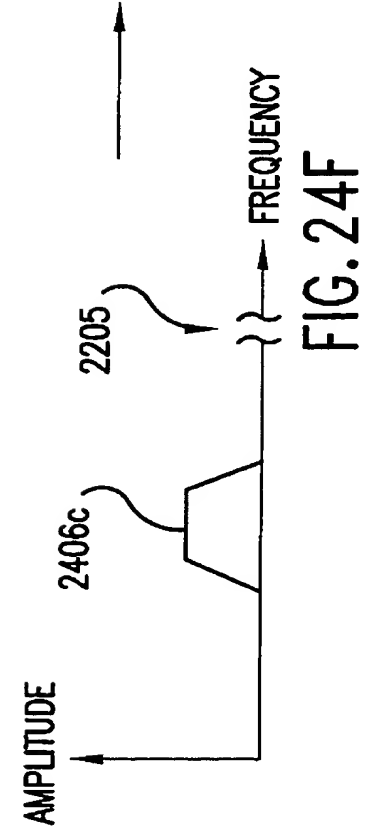
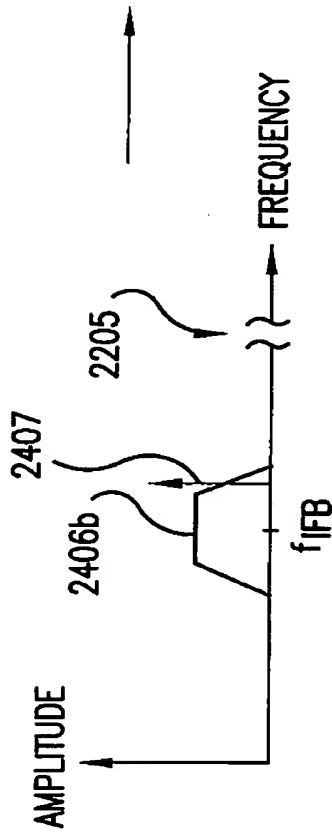
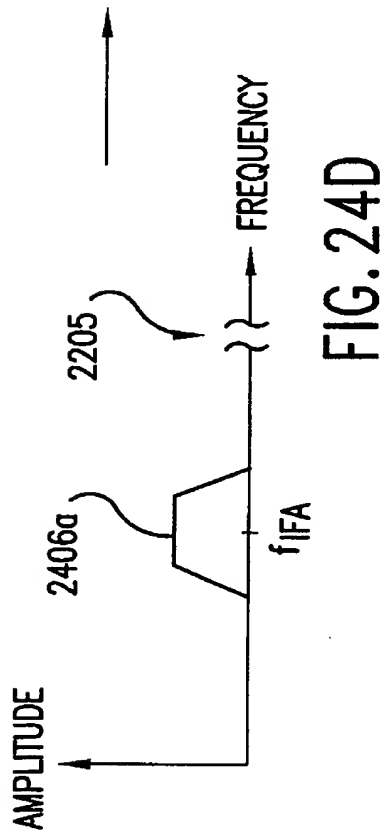
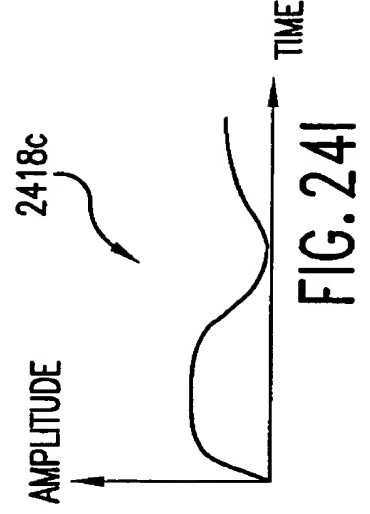
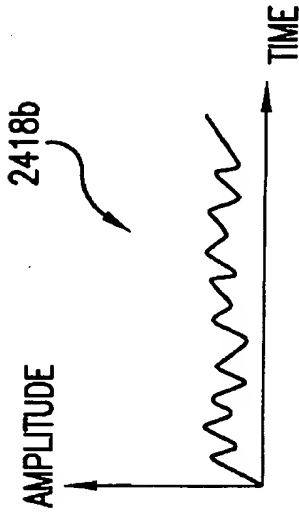
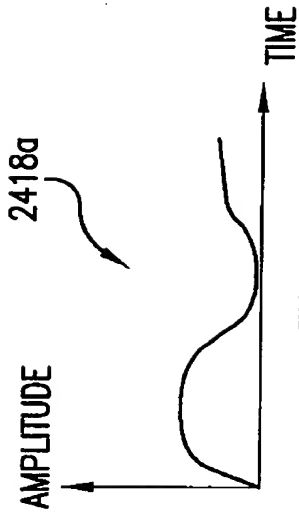


FIG. 24C



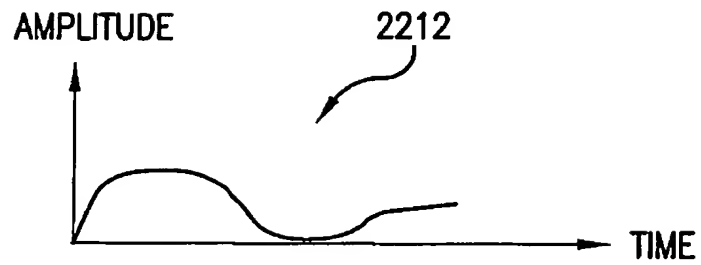


FIG. 24J

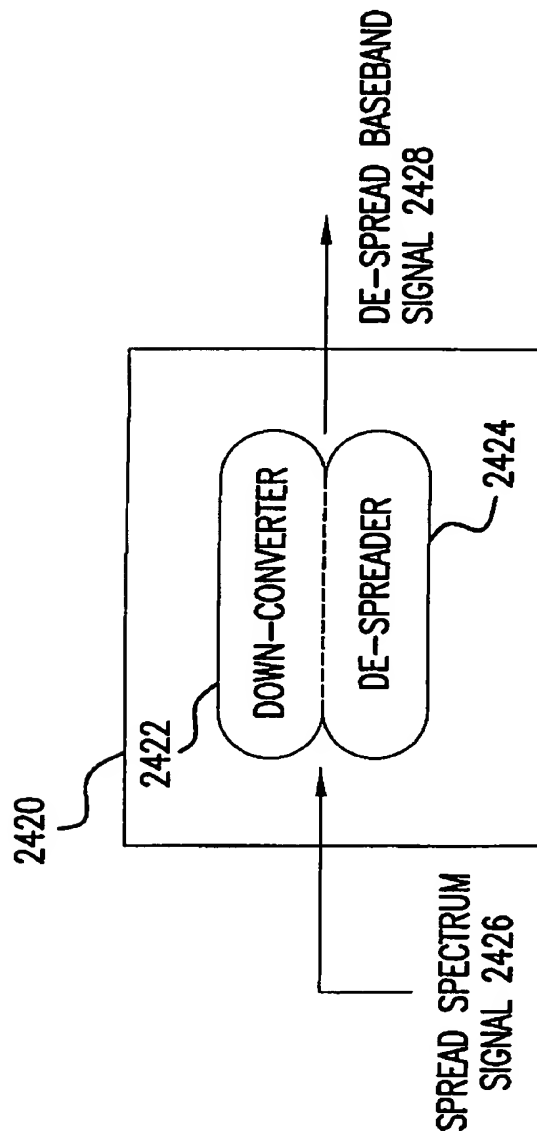


FIG.24K

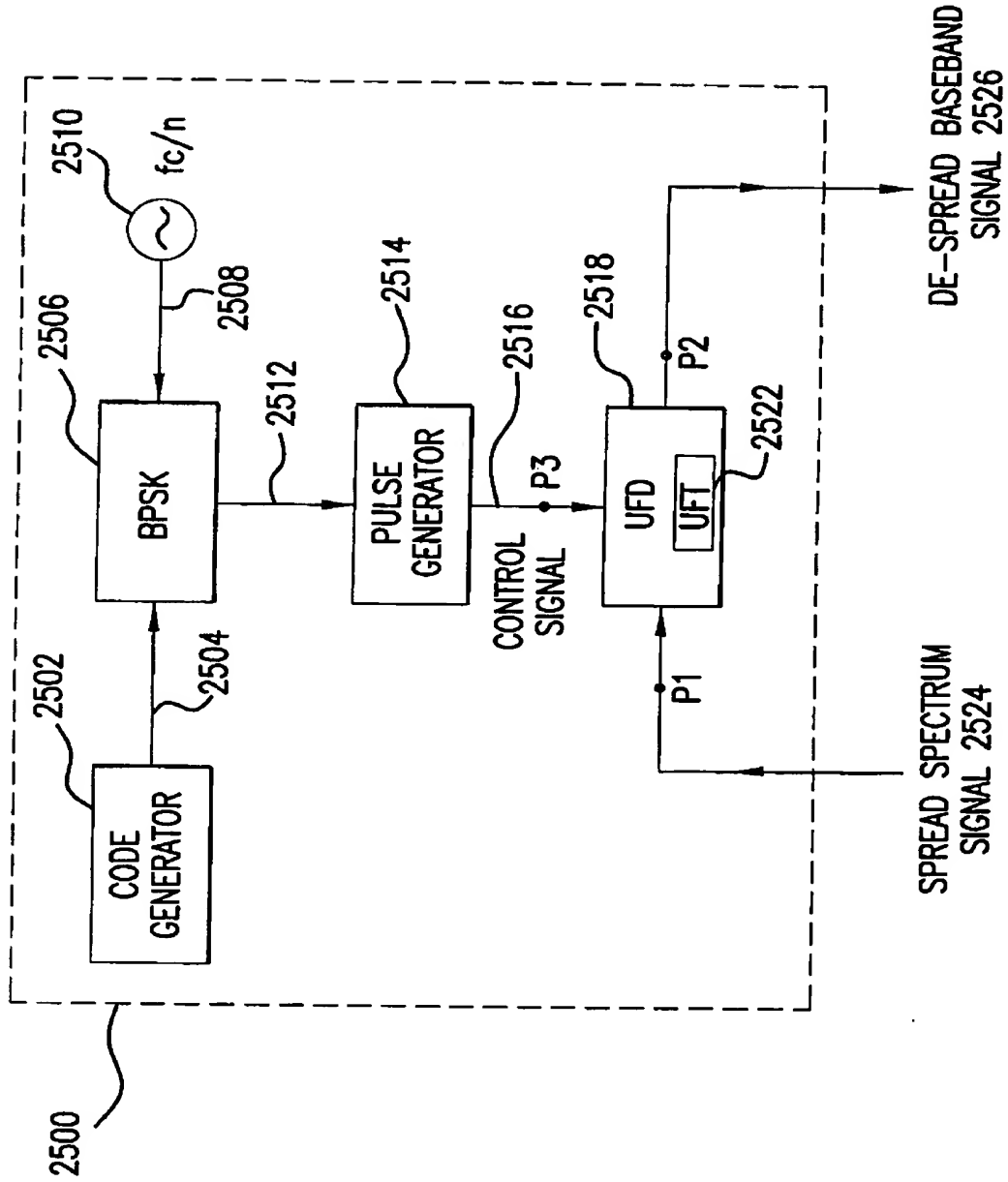


FIG. 25A



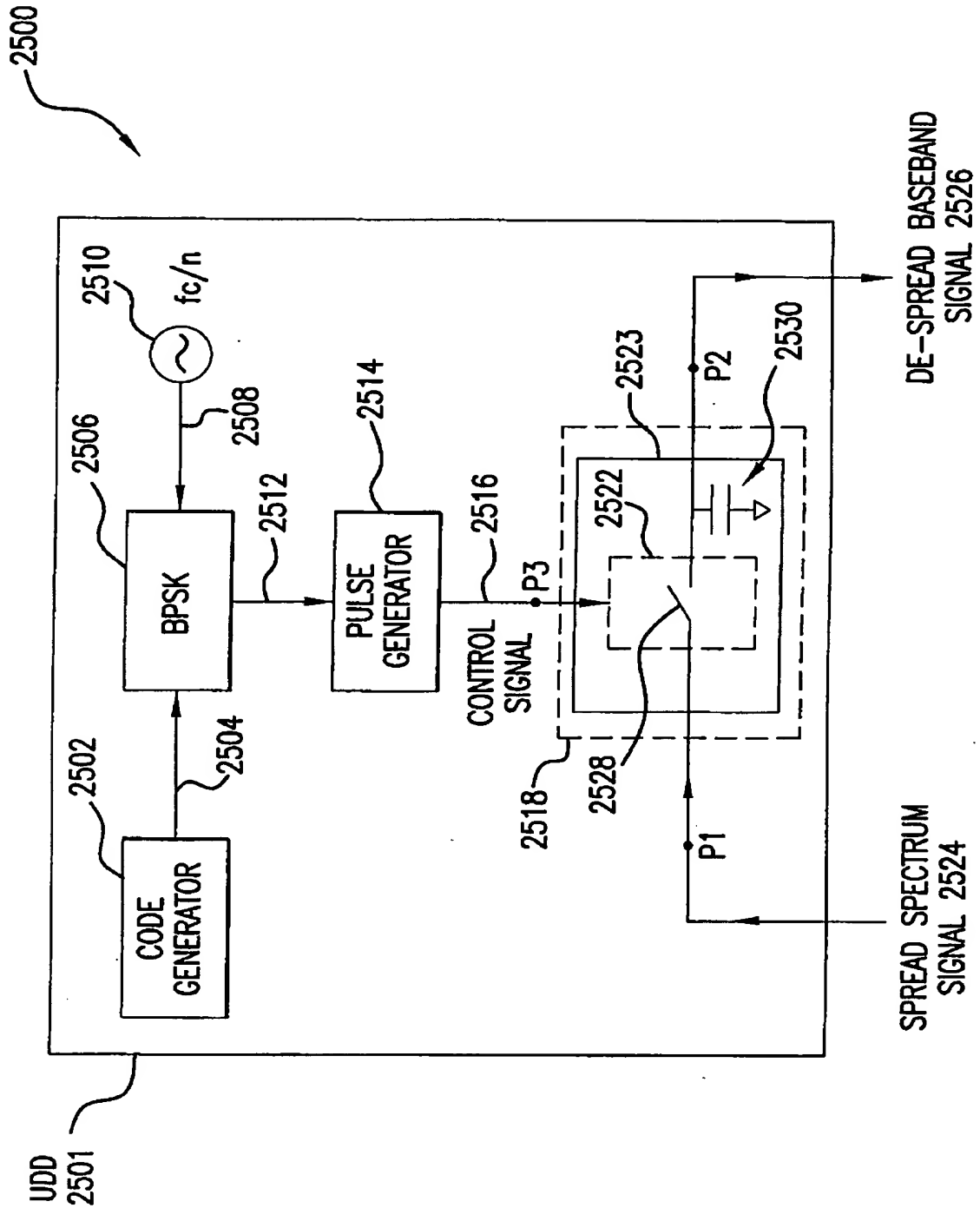
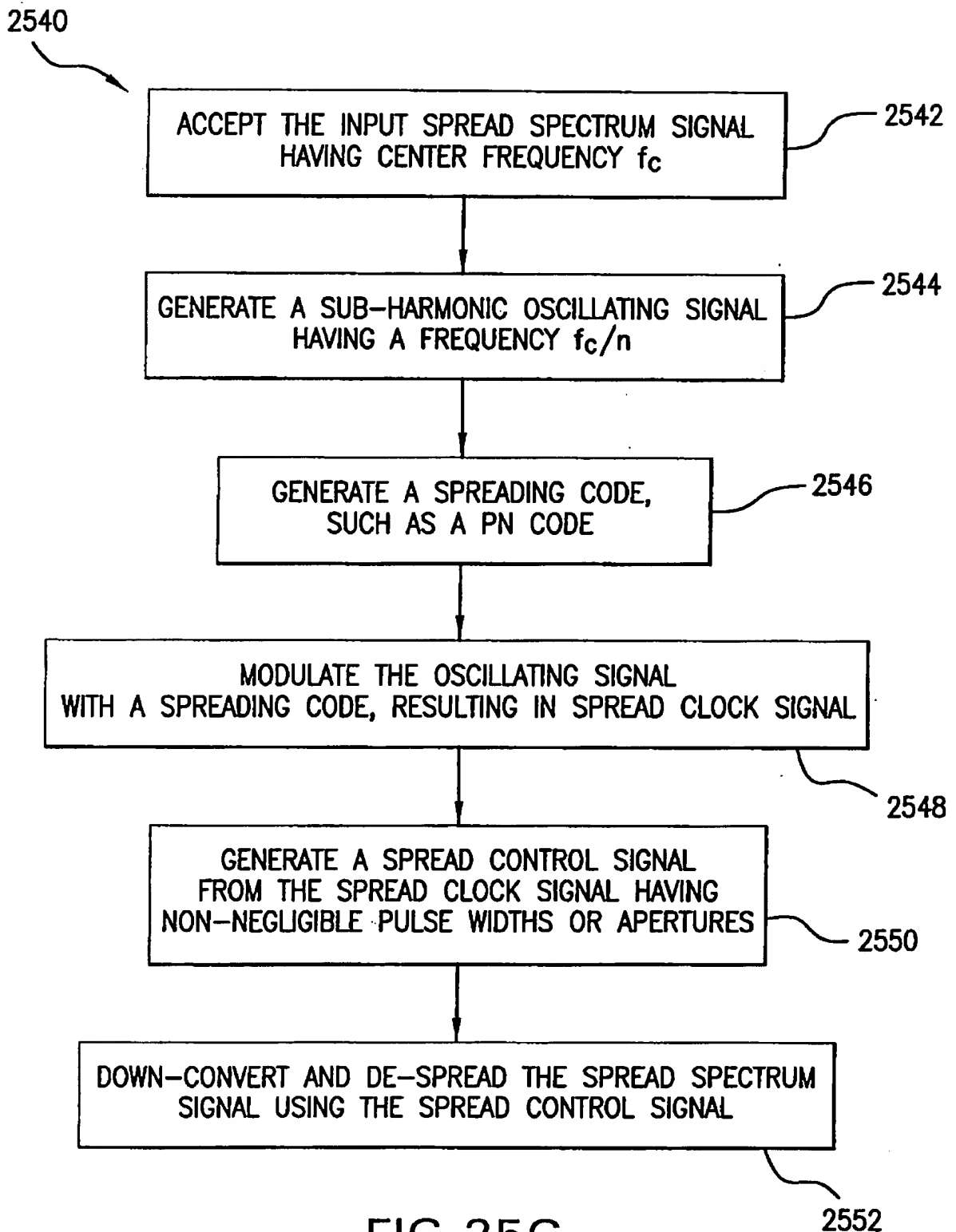


FIG. 25B



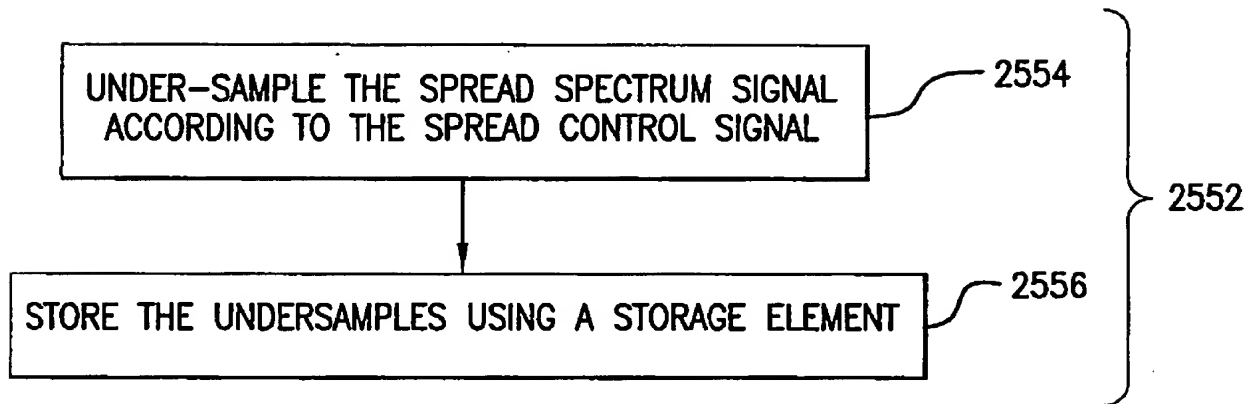


FIG. 25D

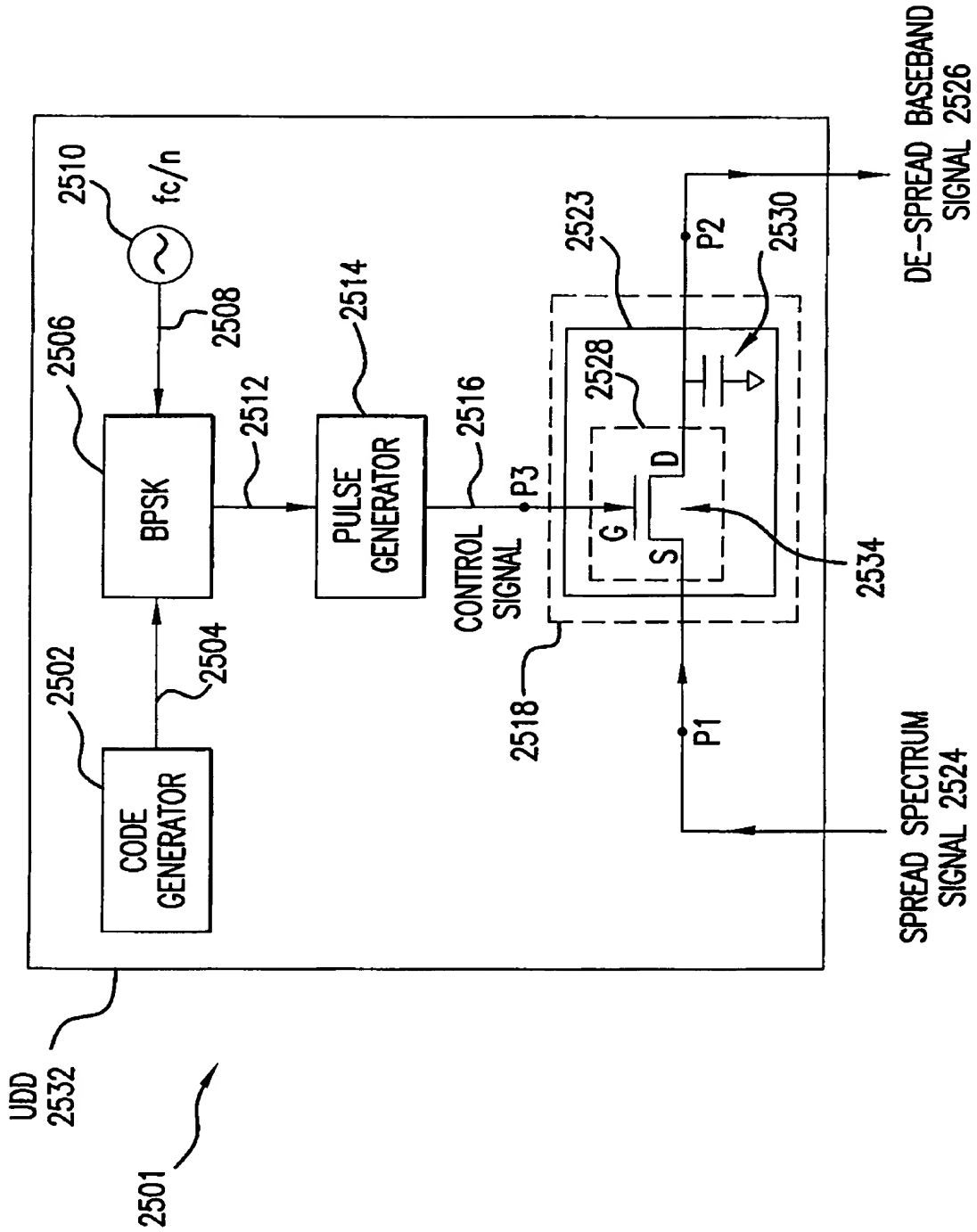


FIG. 25E

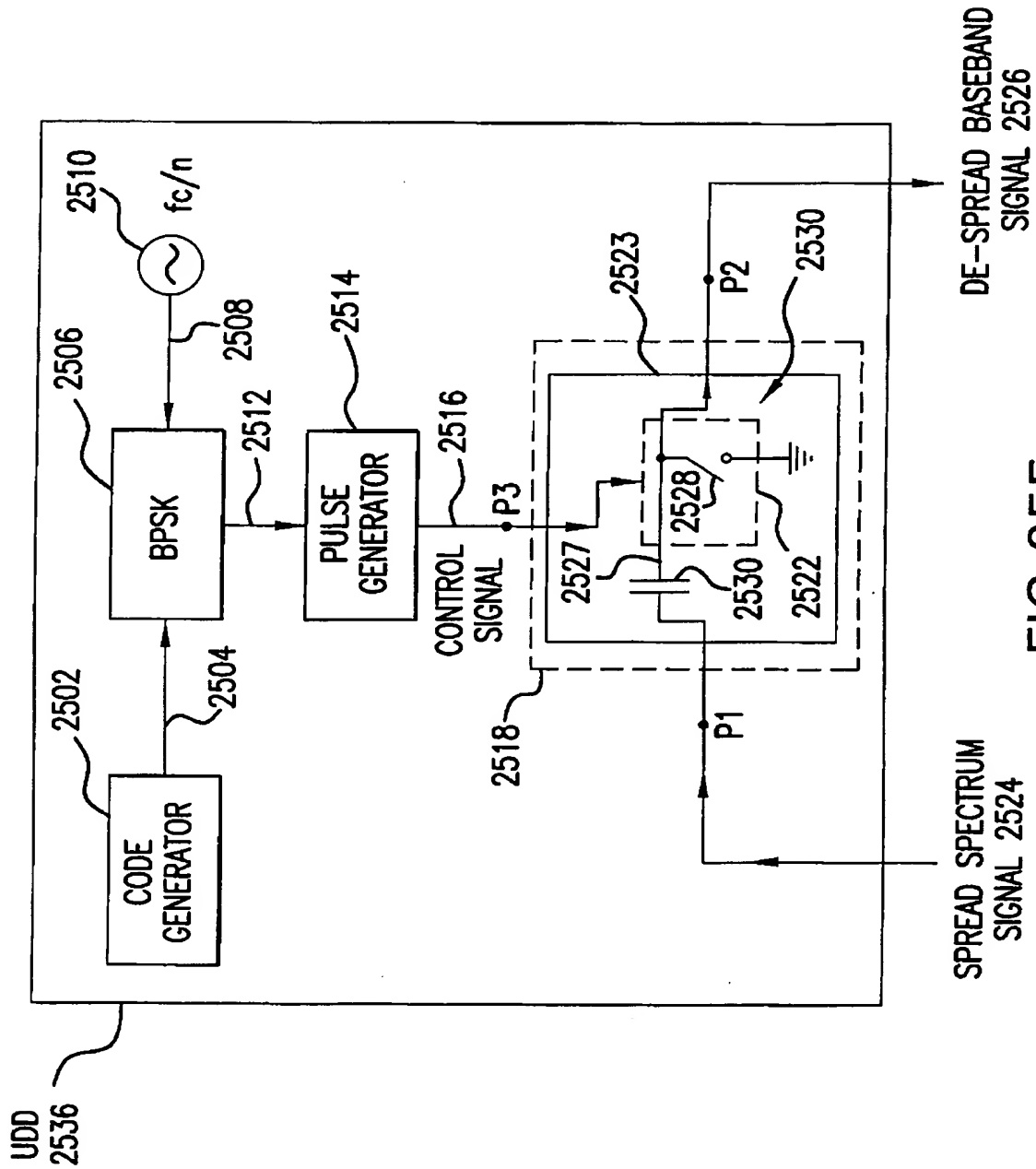


FIG. 25F

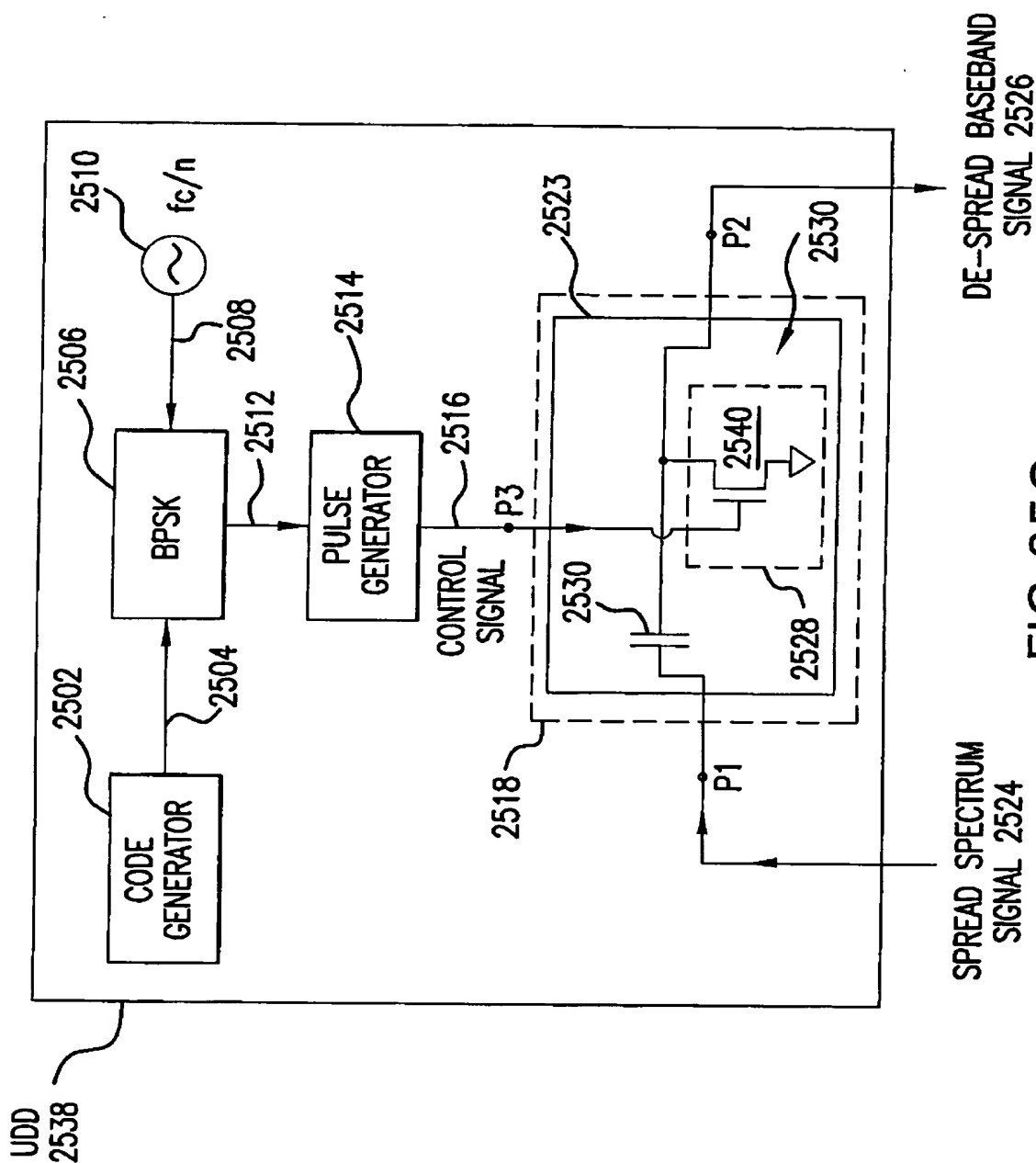


FIG. 25G

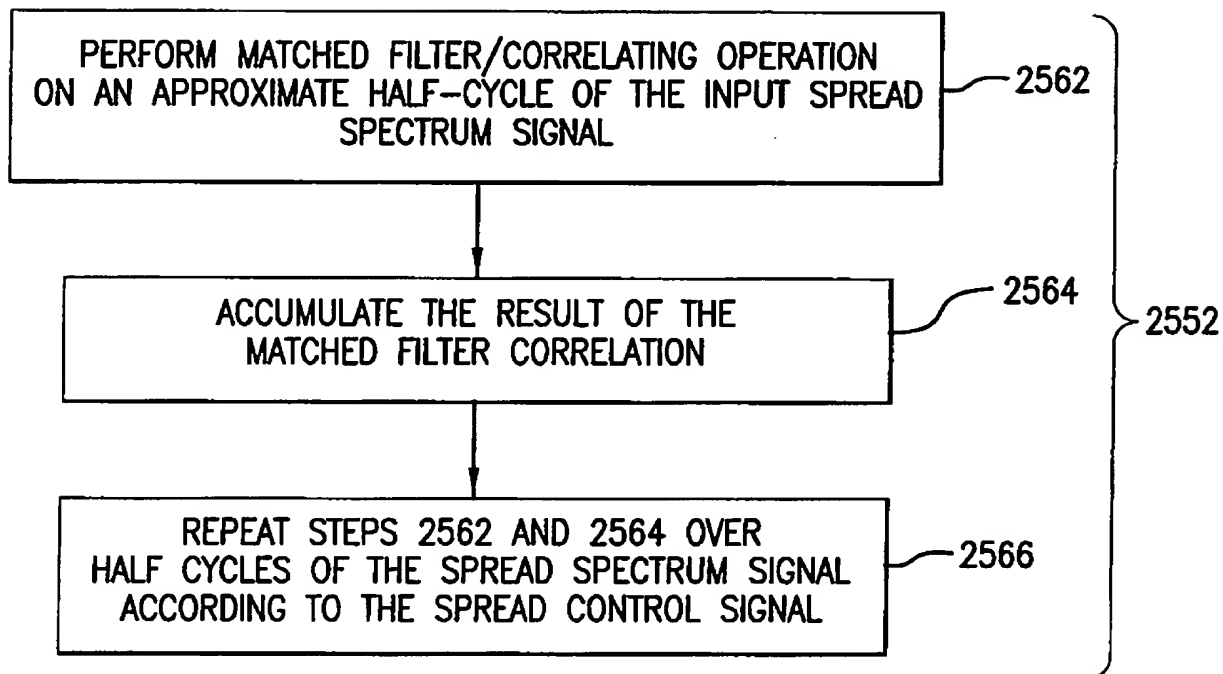


FIG.25H

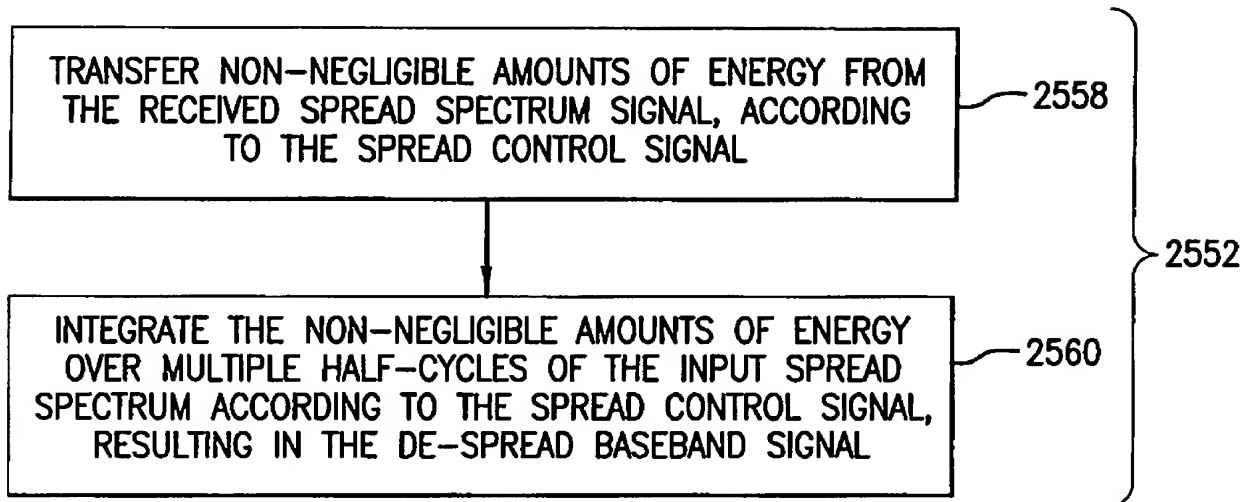


FIG.25I



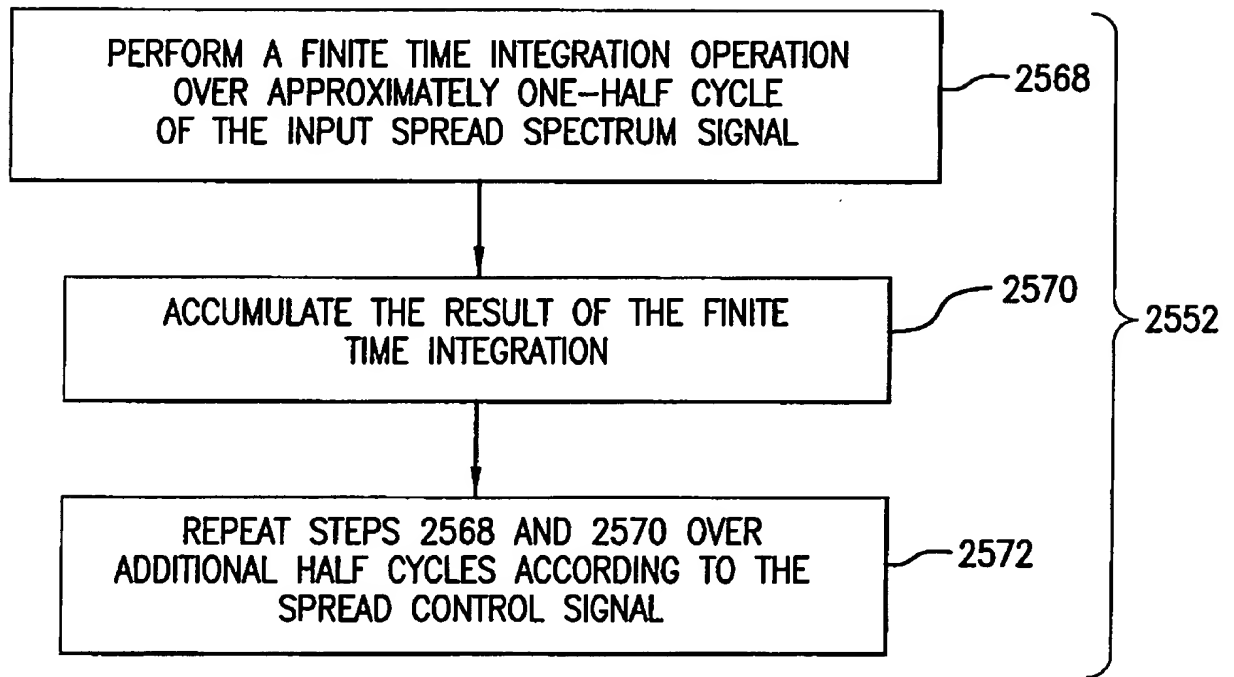


FIG.25J

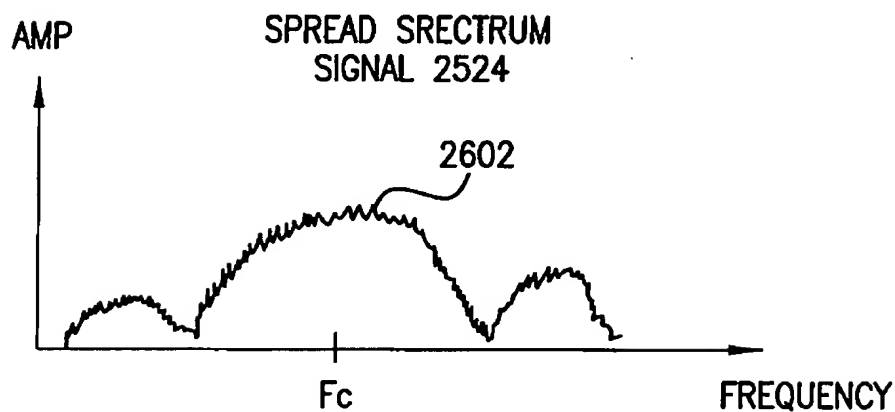
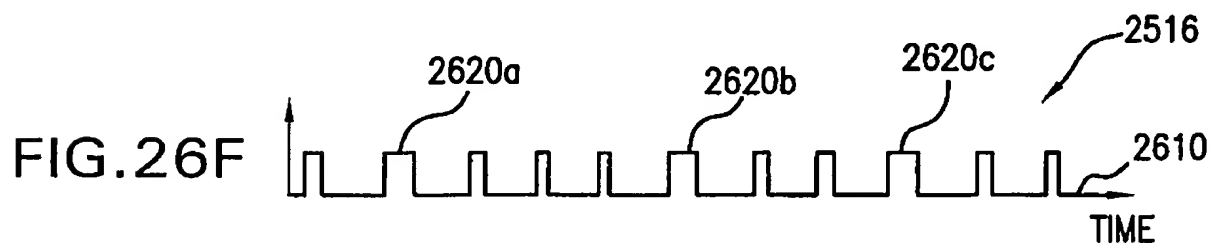
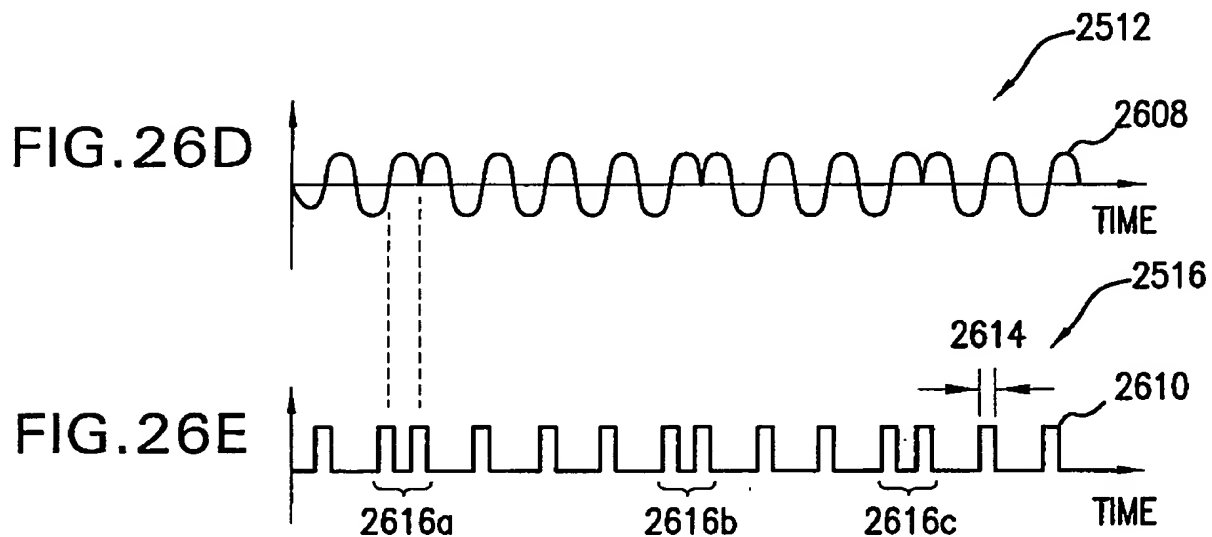
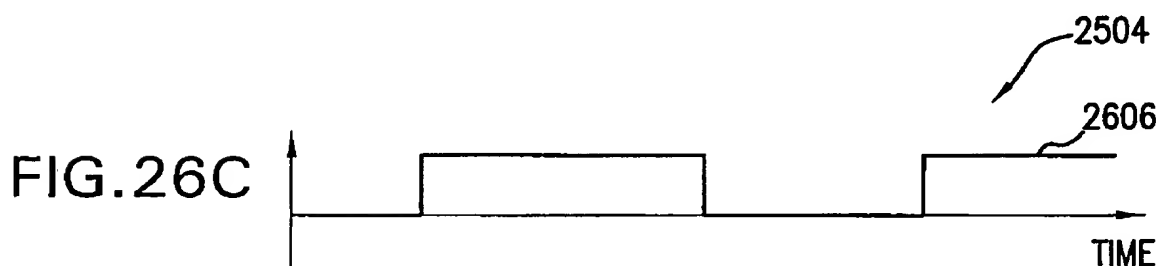
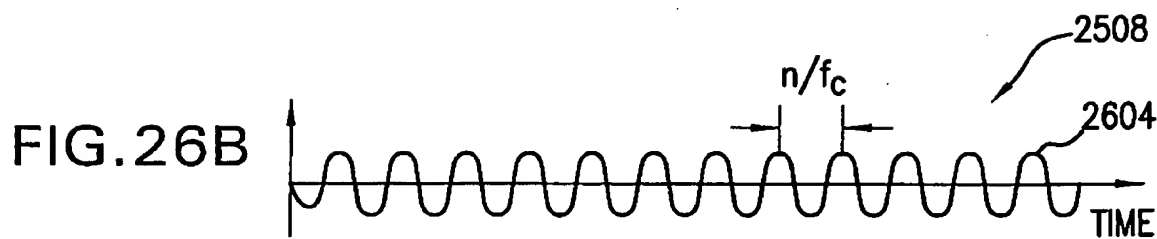


FIG.26A



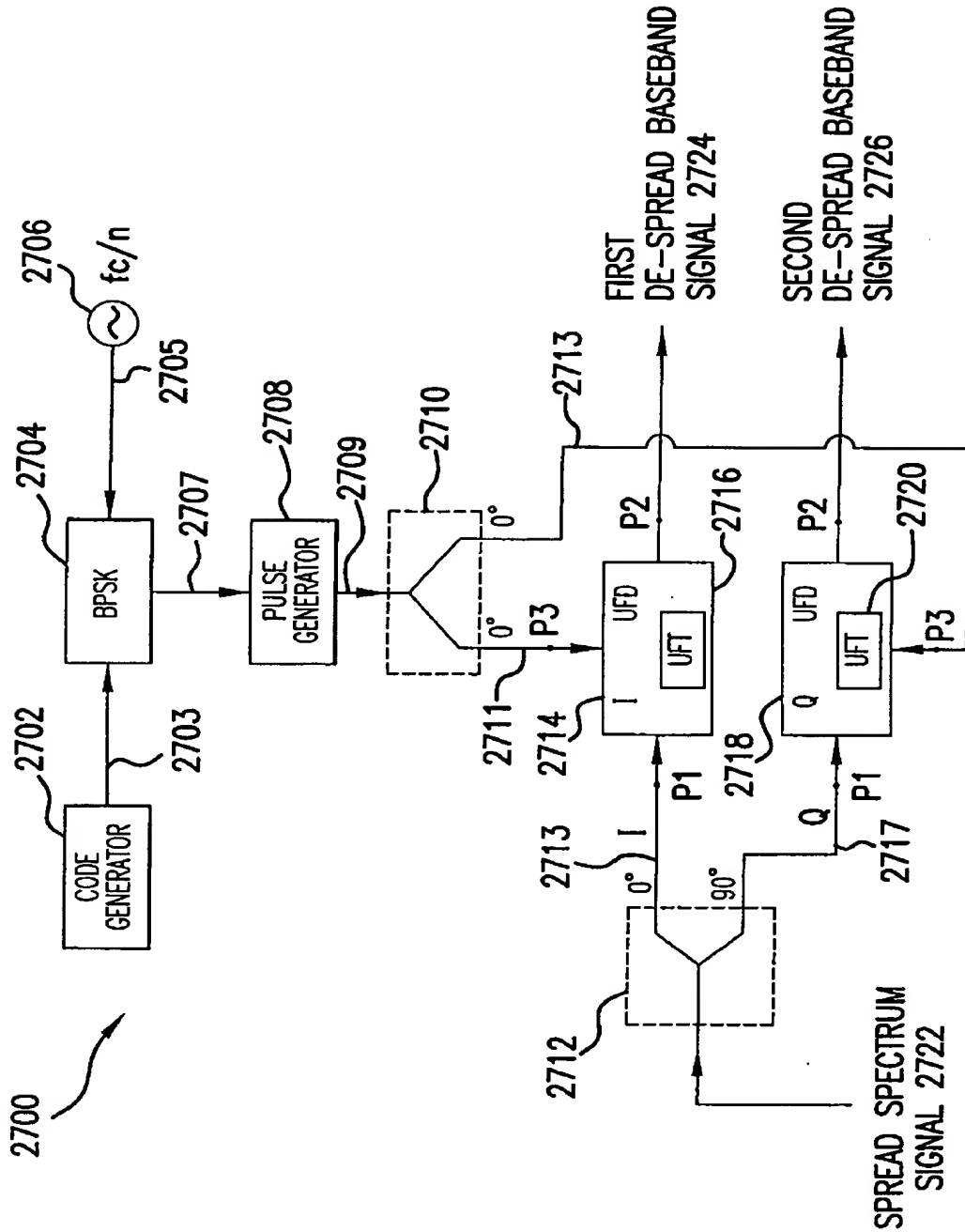


FIG.27

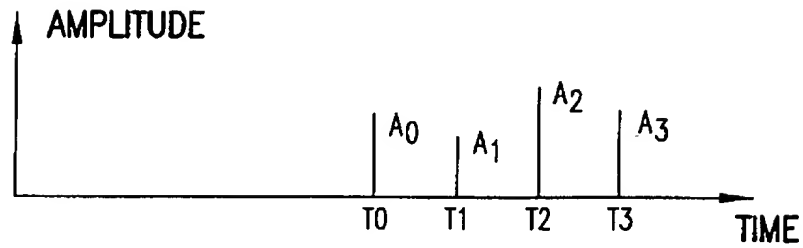


FIG. 28A

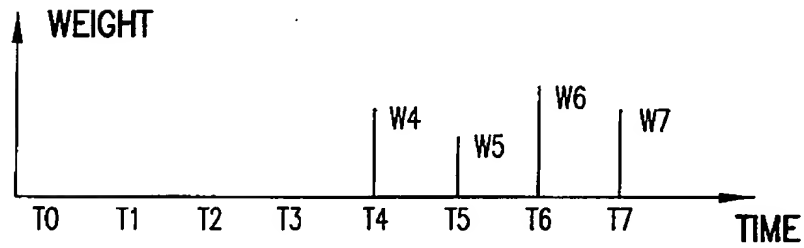


FIG. 28B

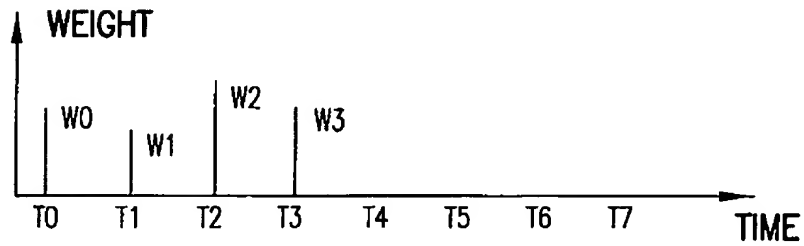


FIG. 28C

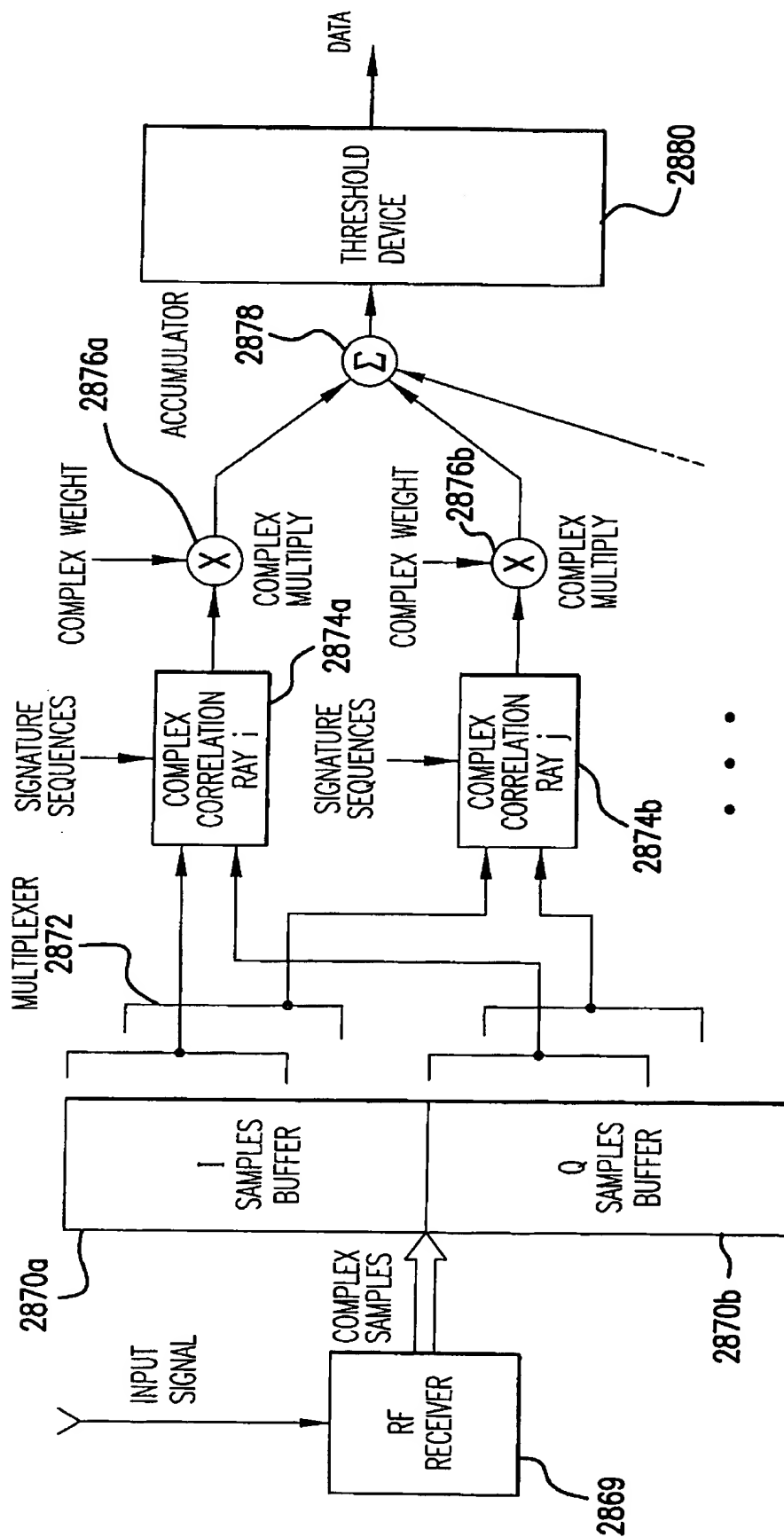


FIG. 28D

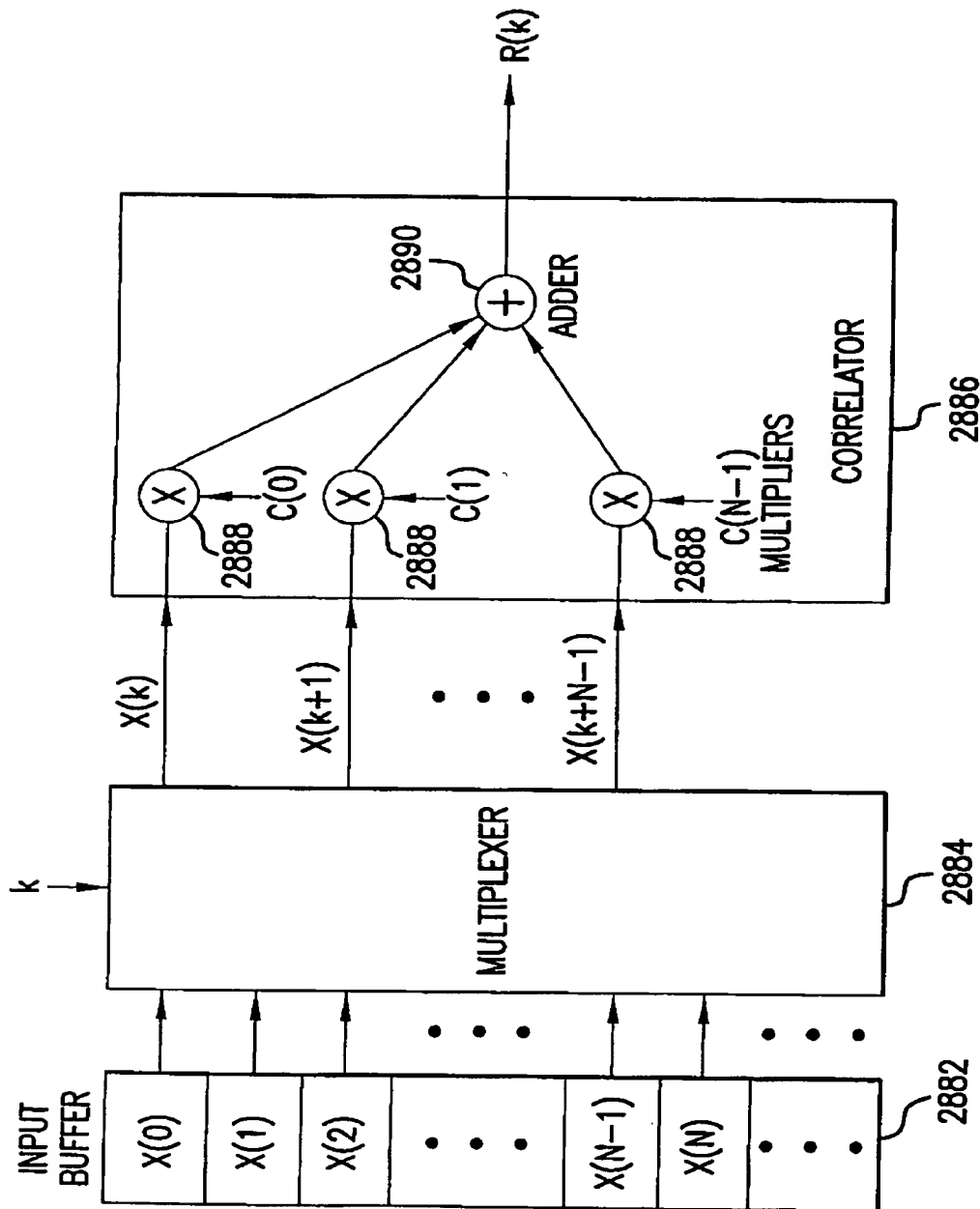


FIG. 28E

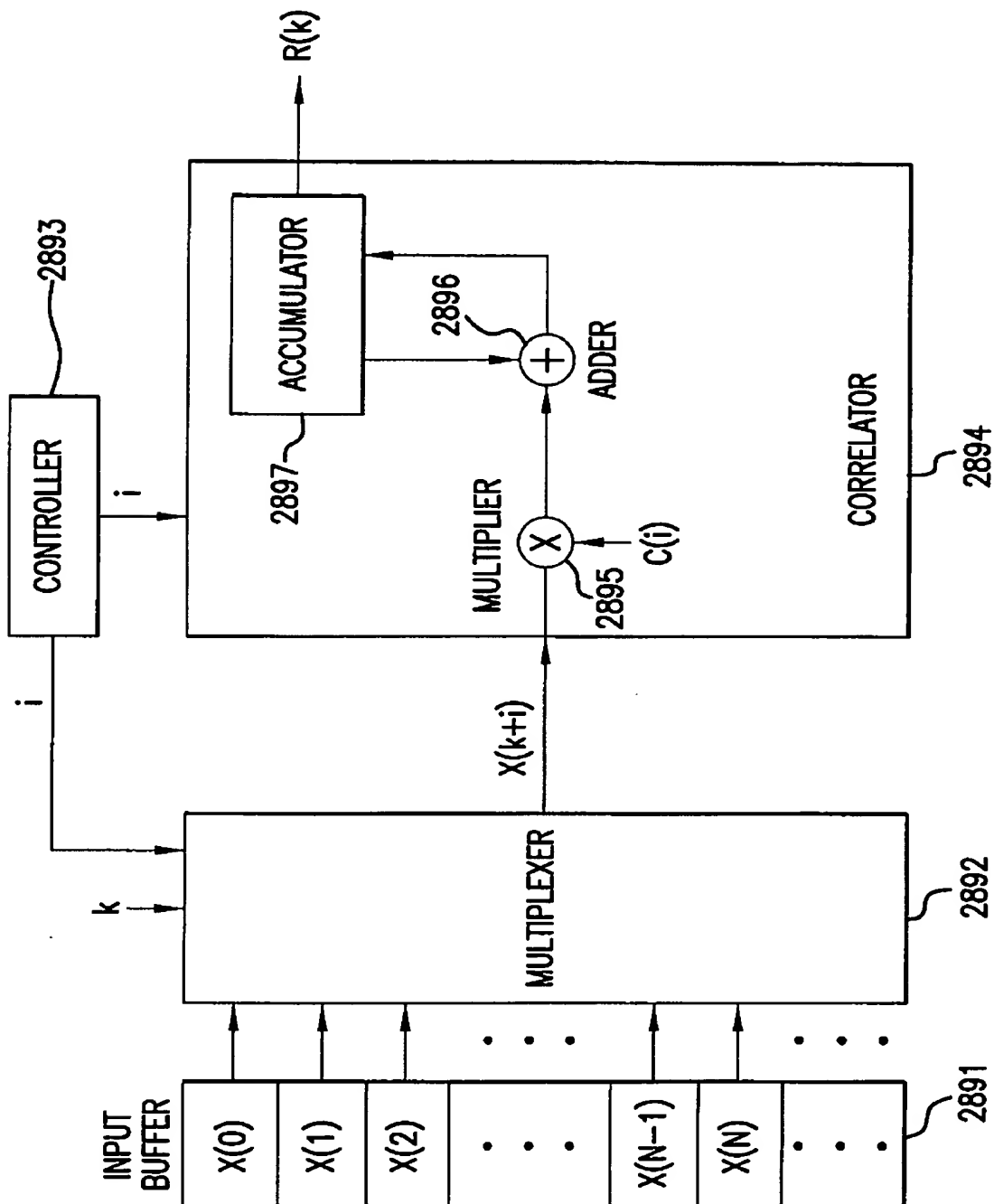


FIG. 28F



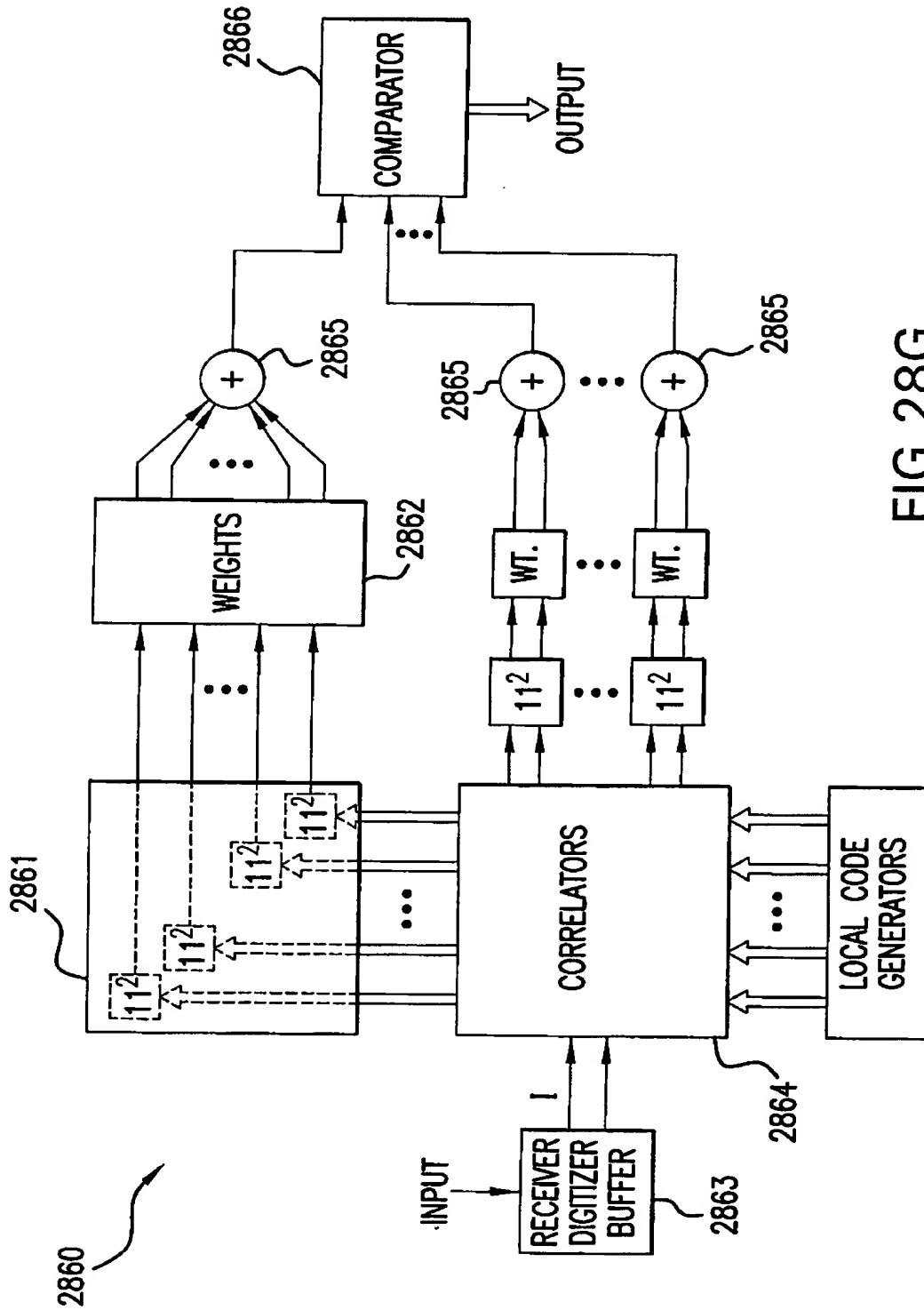


FIG. 28G

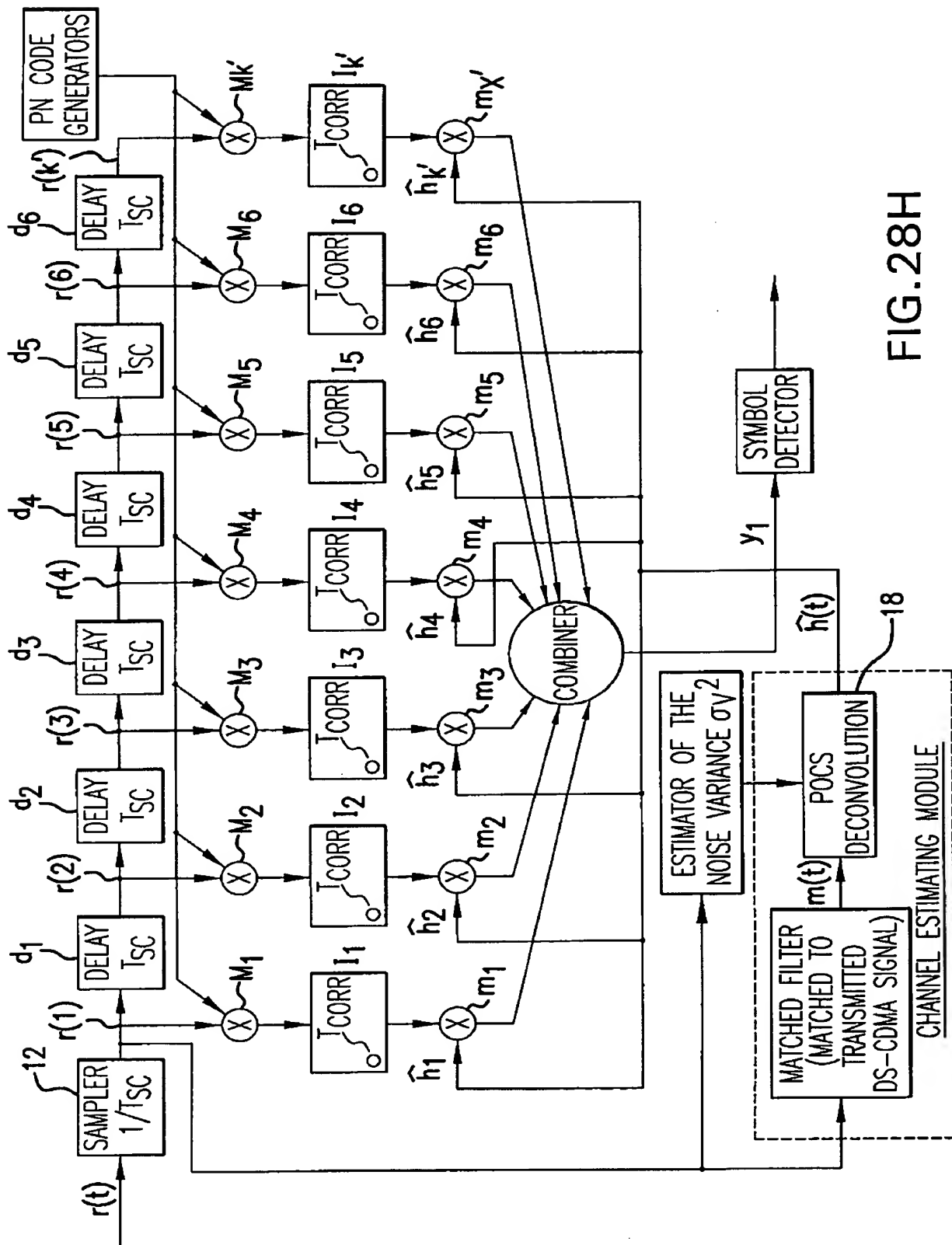


FIG. 28H

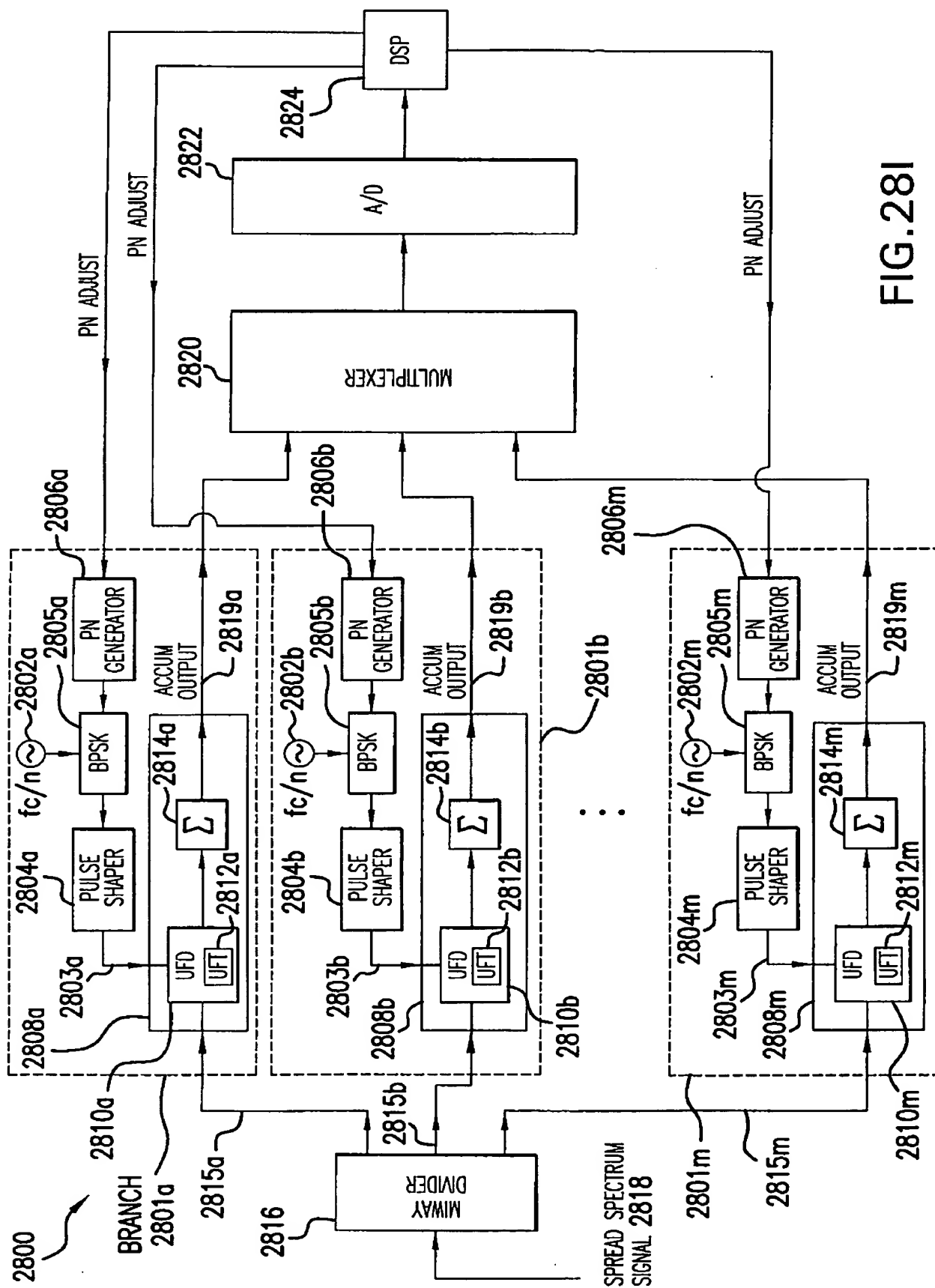


FIG. 28I

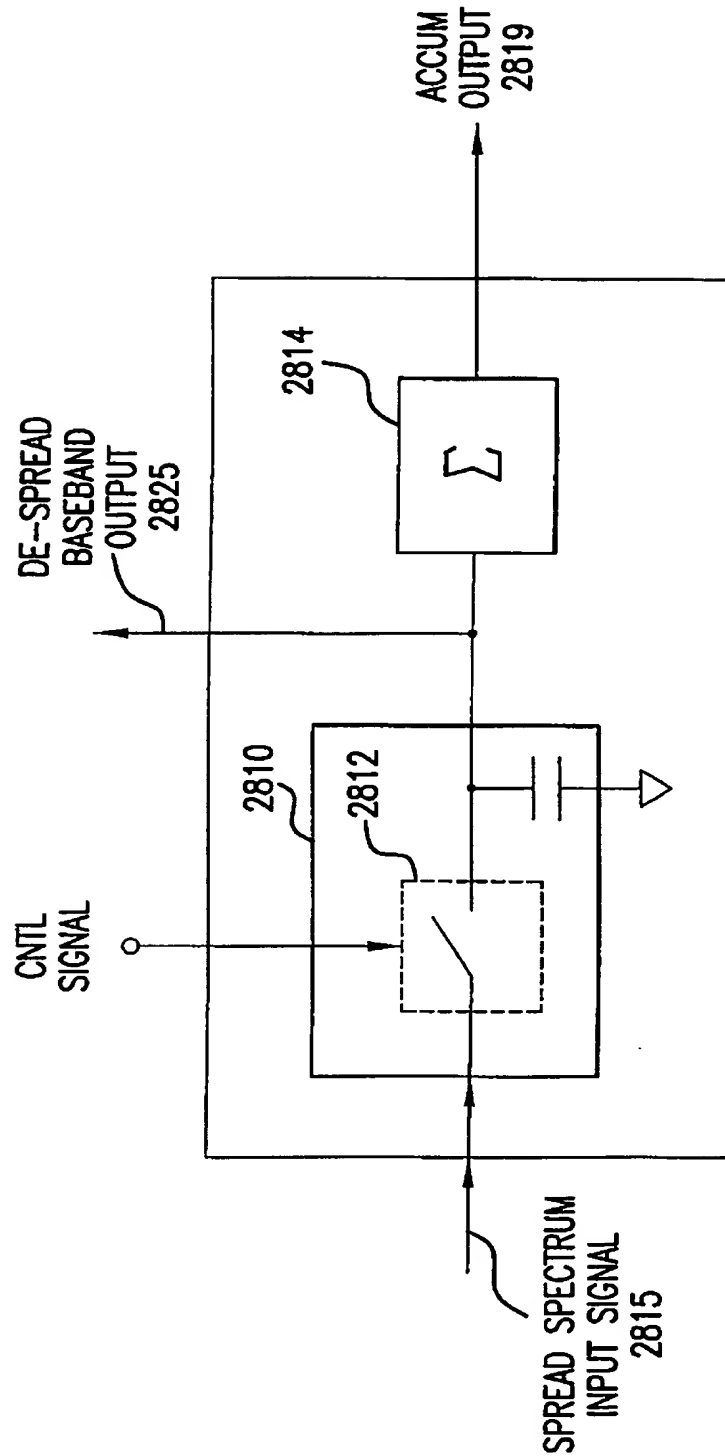


FIG. 28J

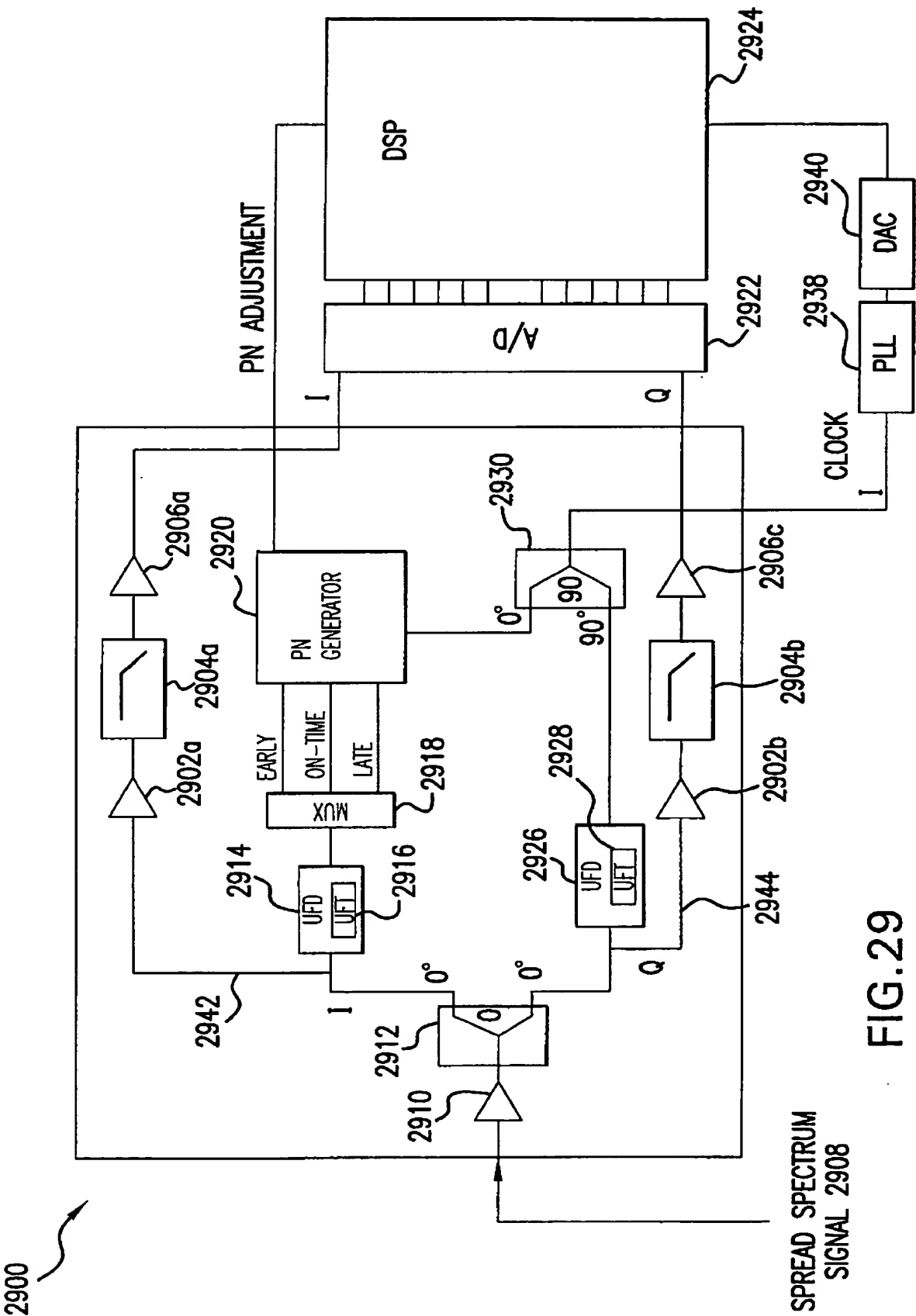
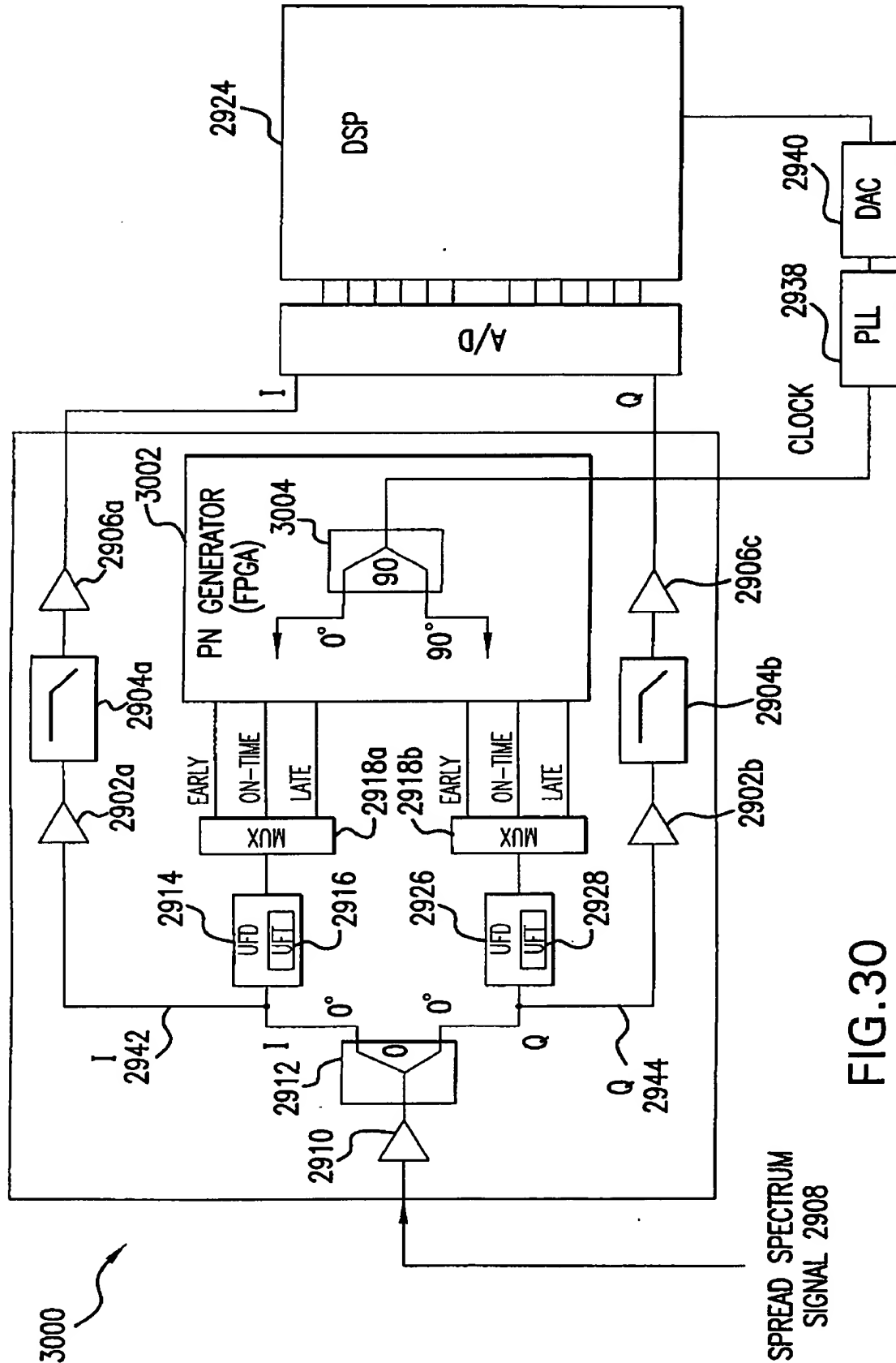


FIG. 29



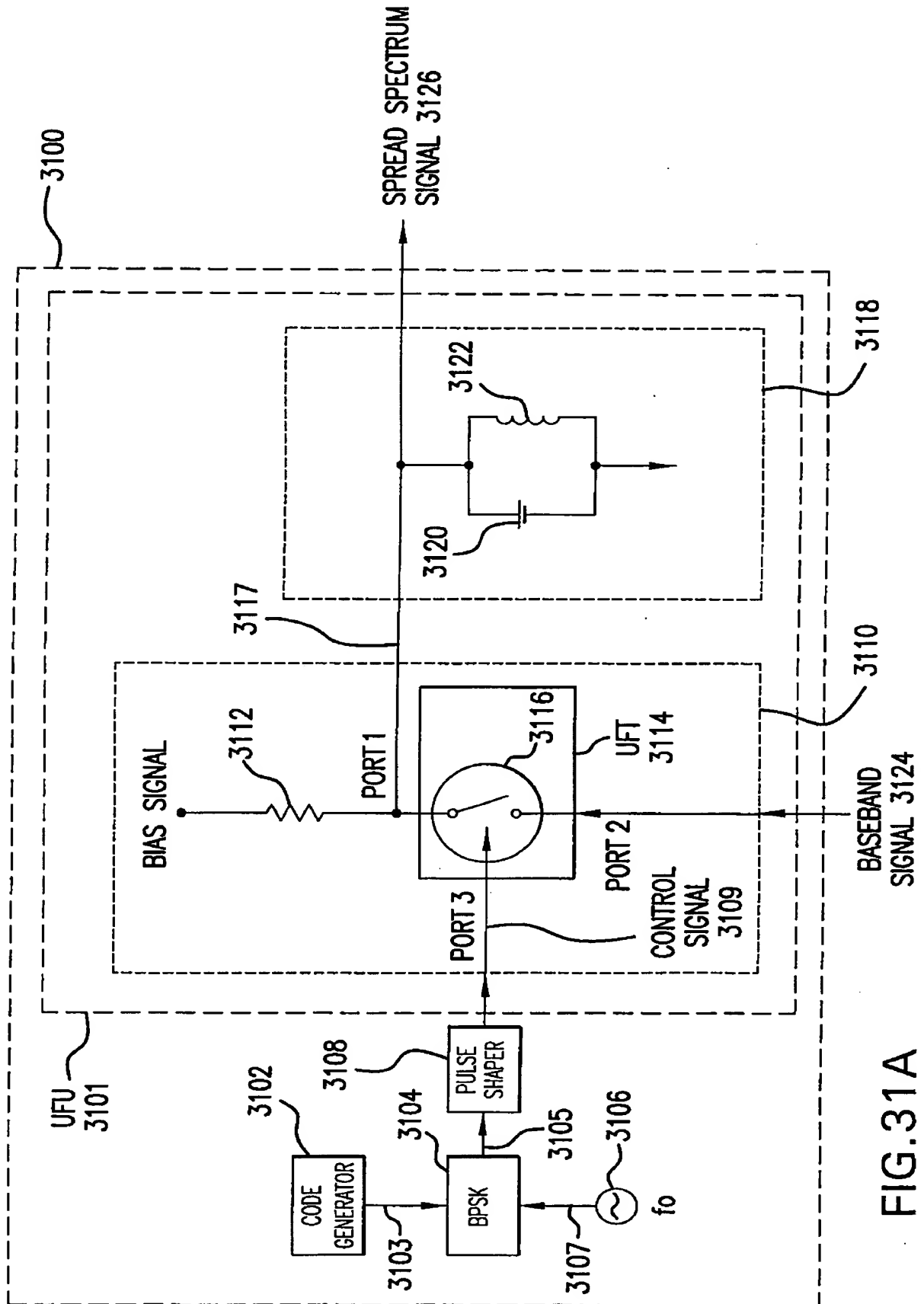


FIG. 31A

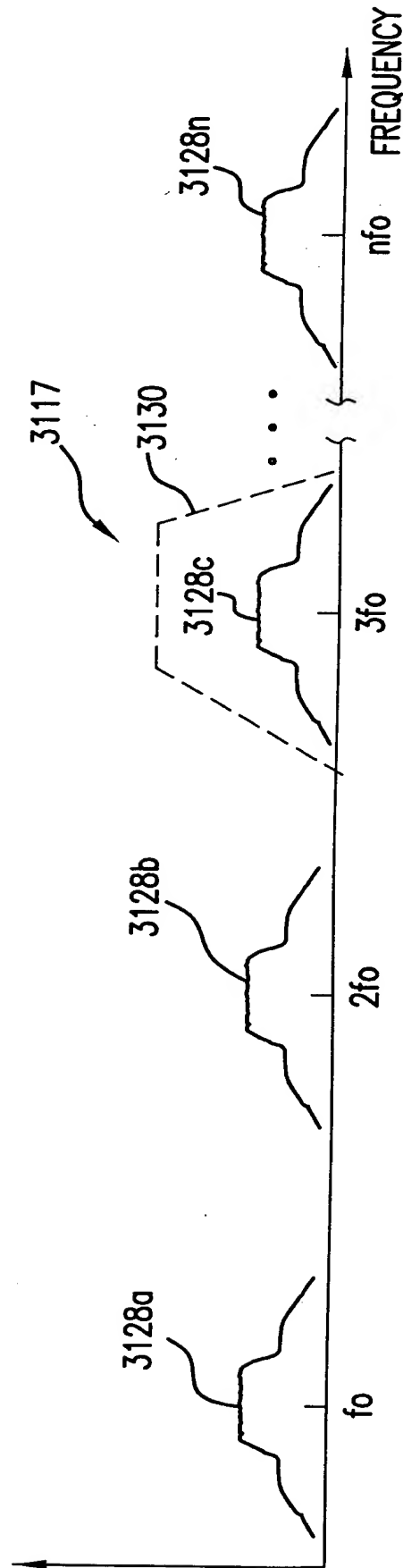


FIG. 31B



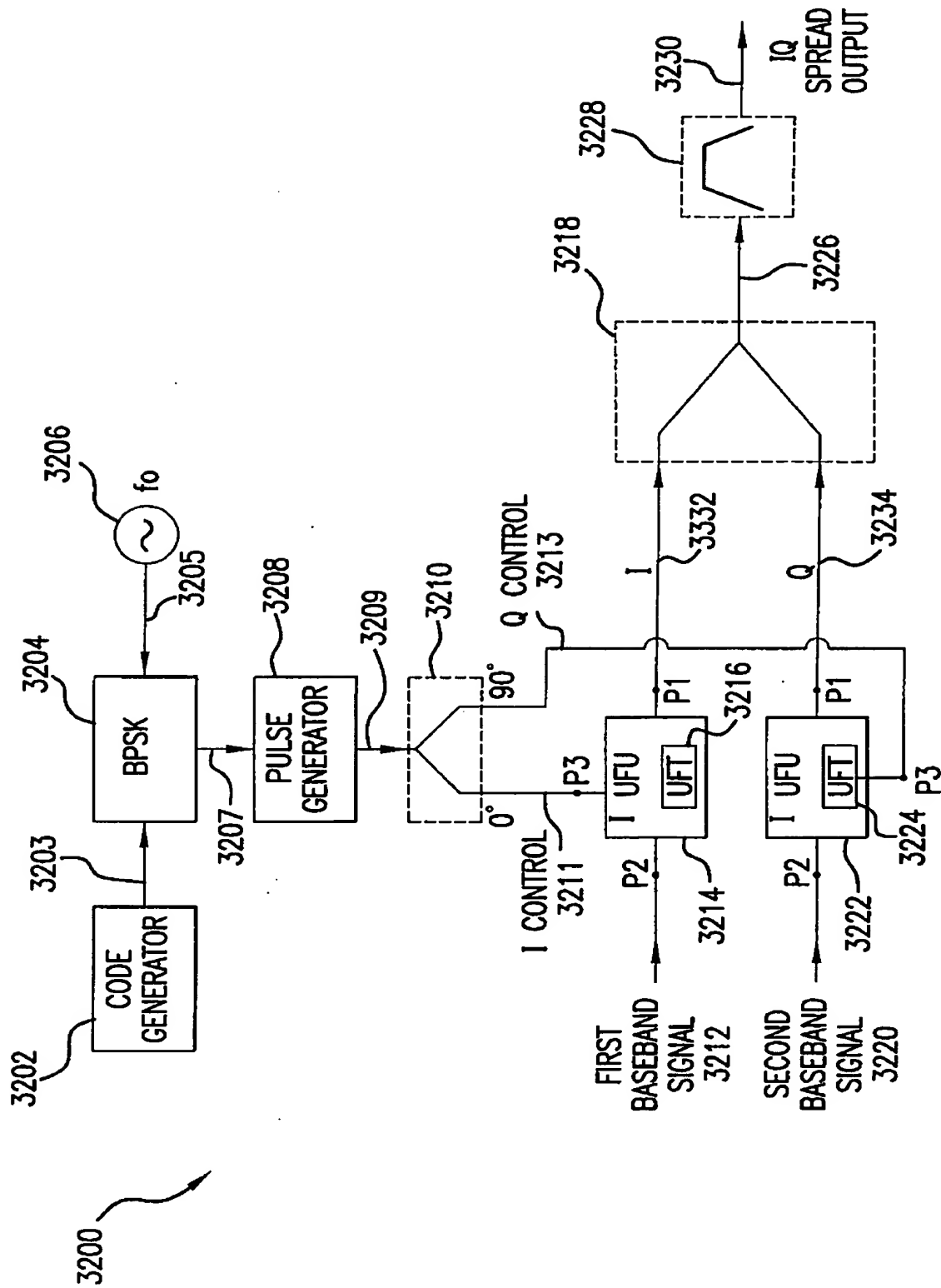
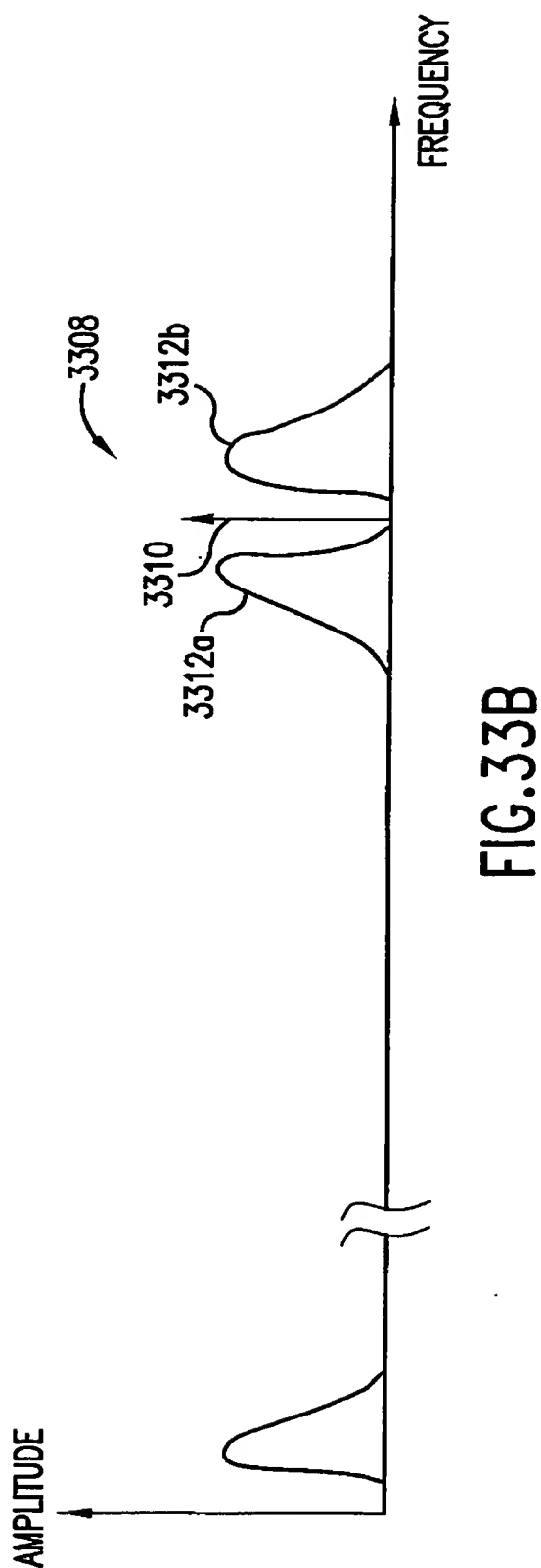
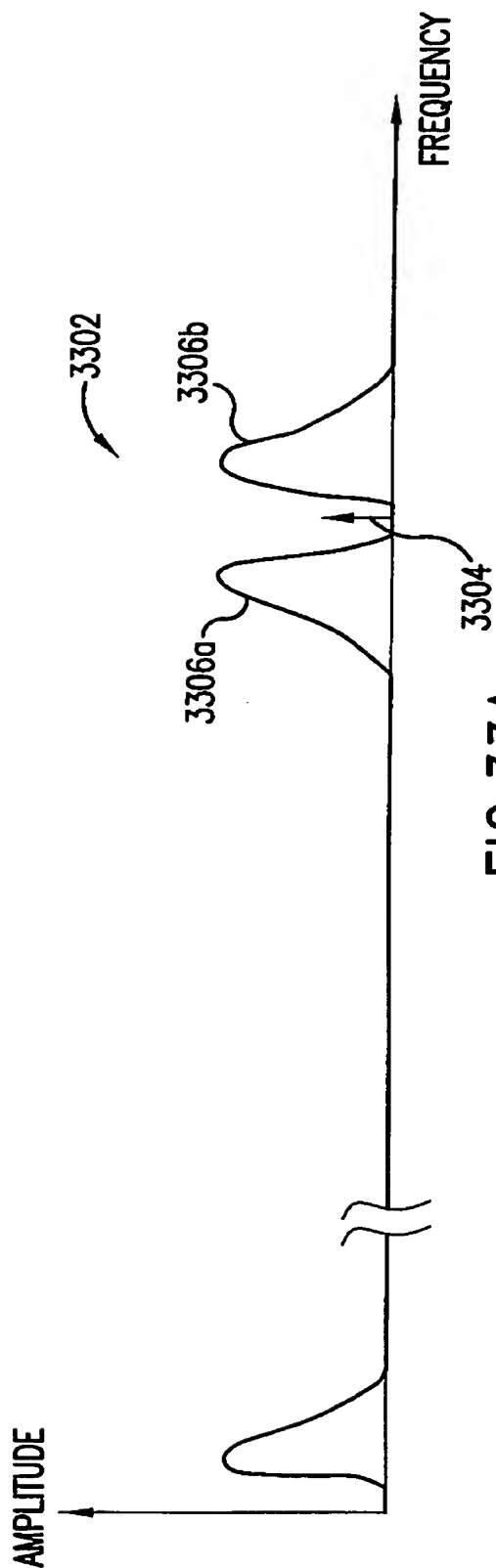


FIG.32



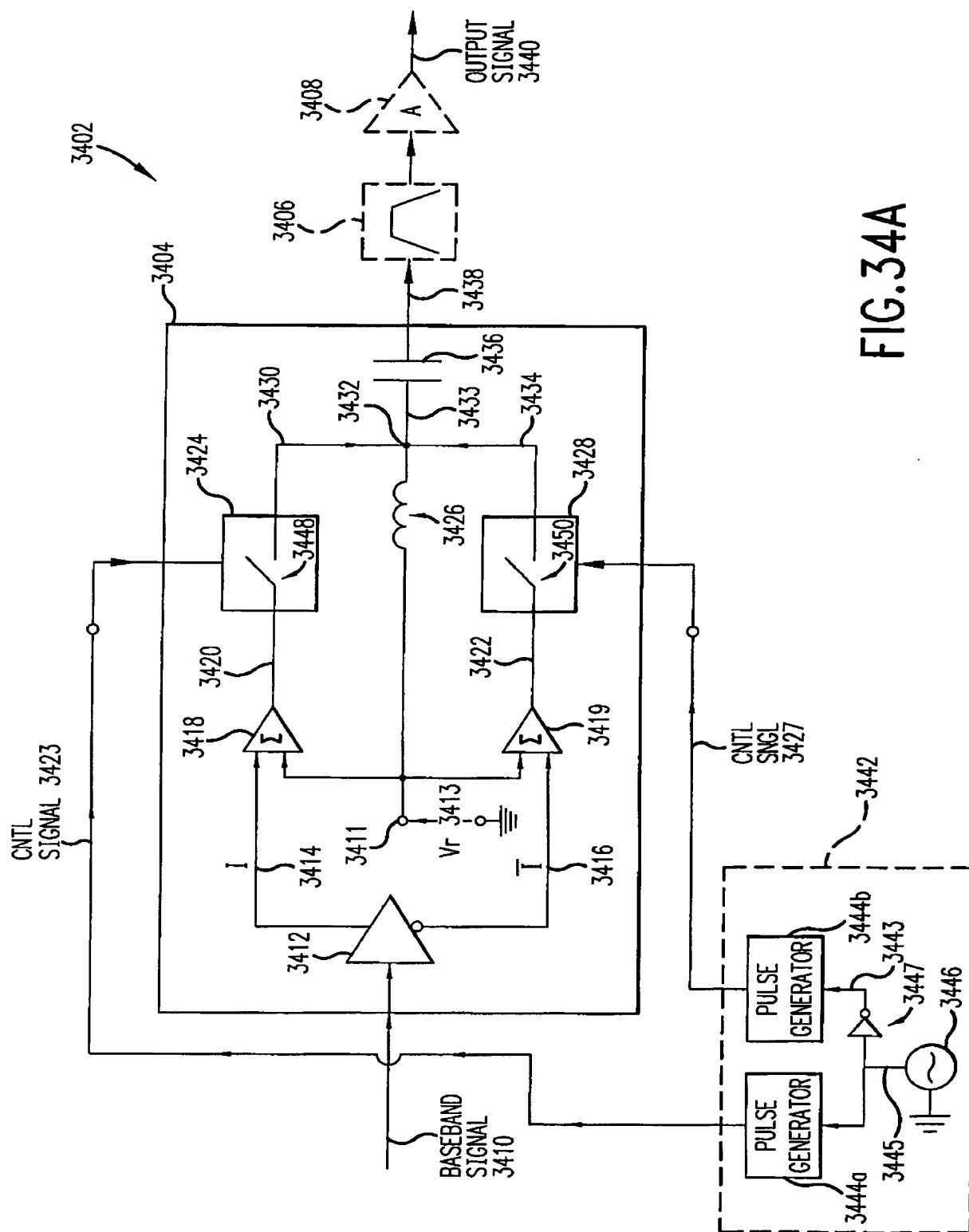


FIG. 34A

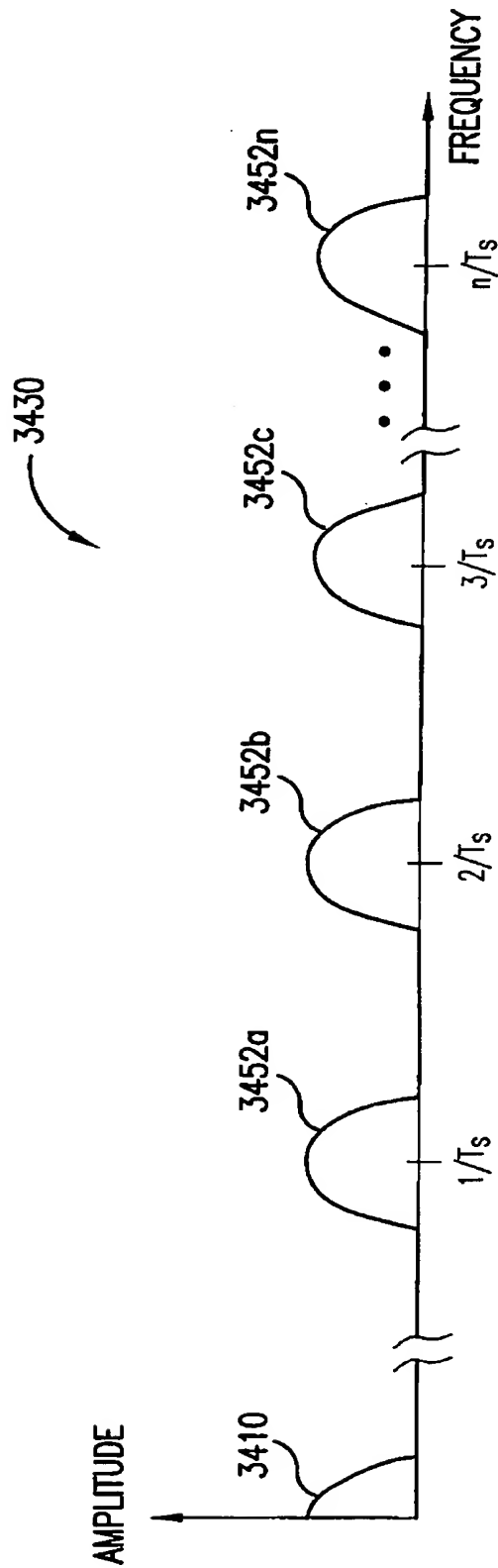


FIG. 34B

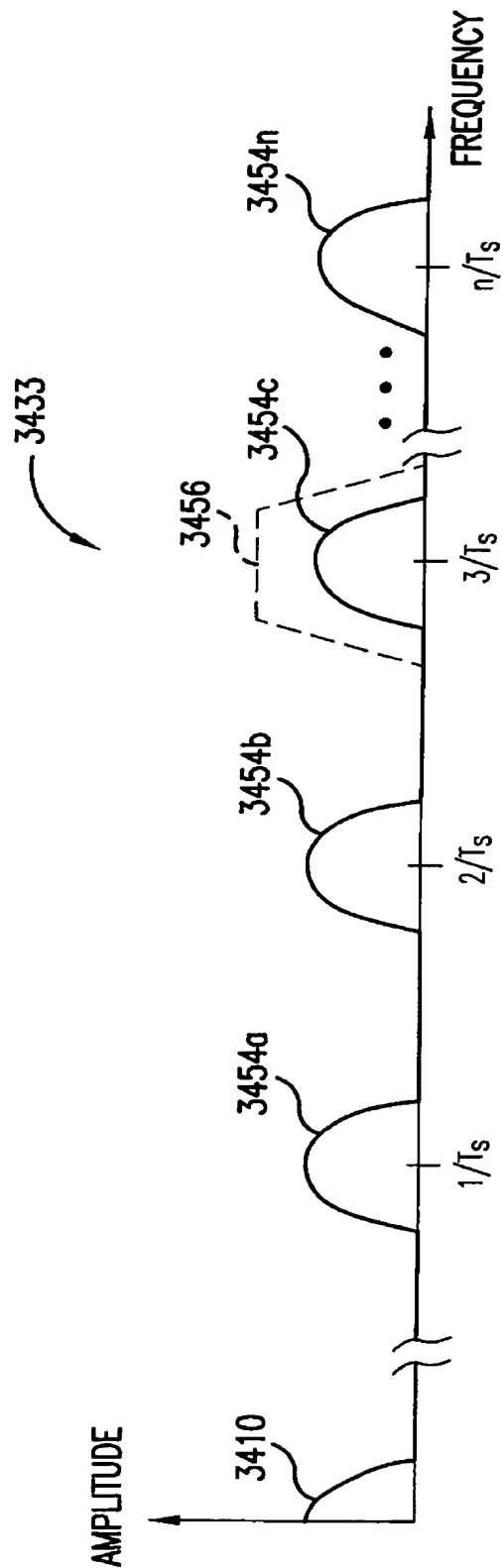


FIG. 34C



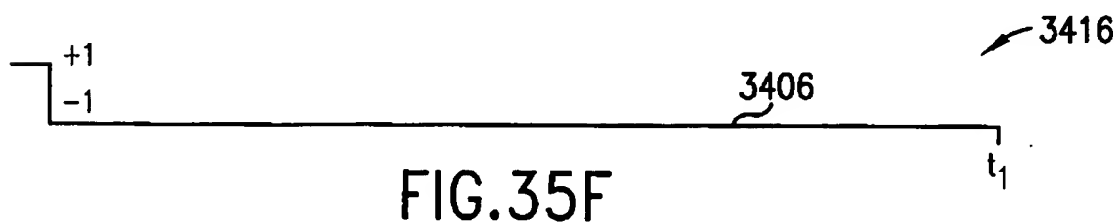
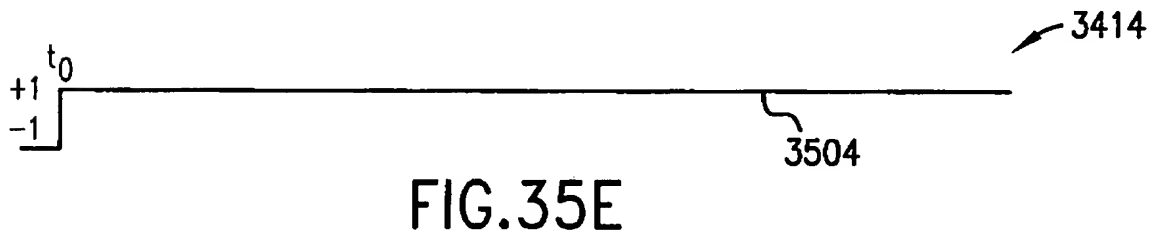
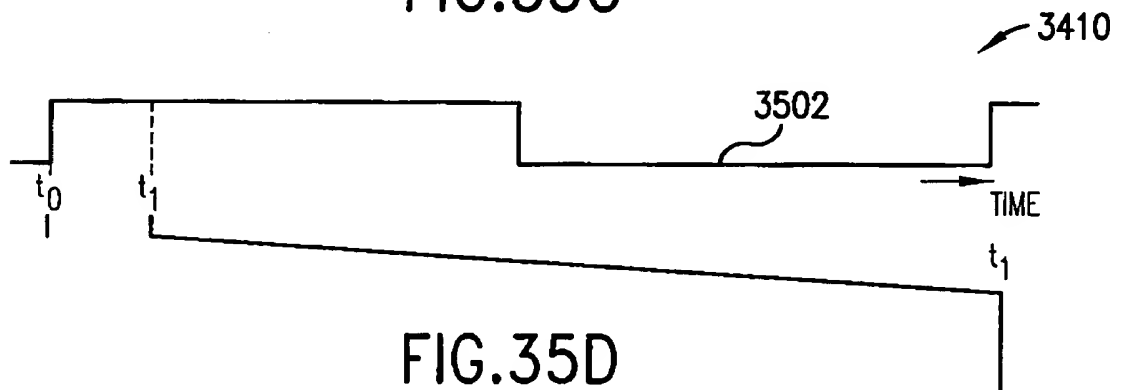
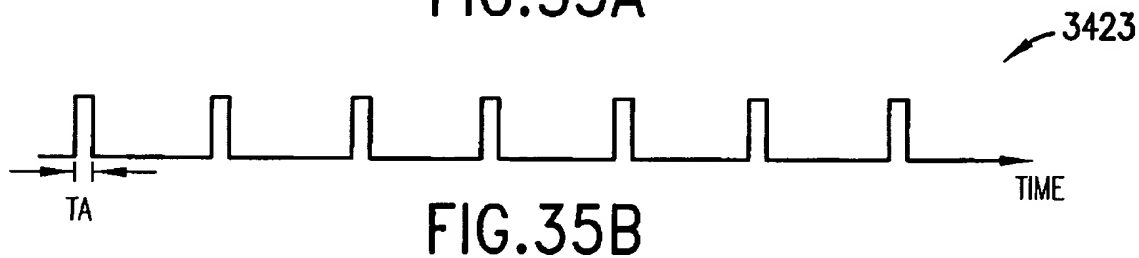
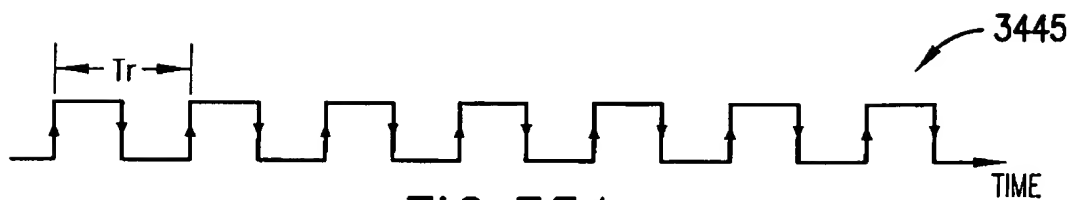




FIG. 35G

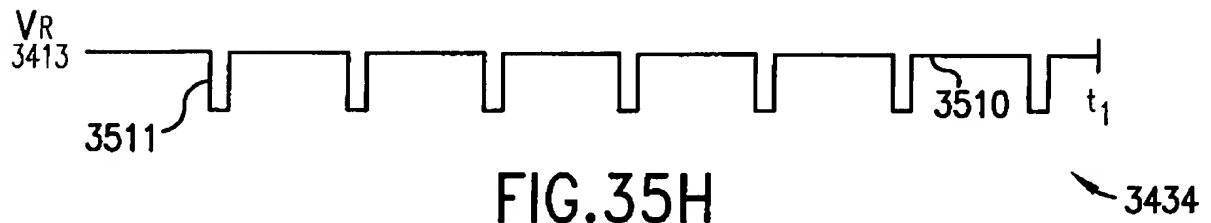


FIG. 35H

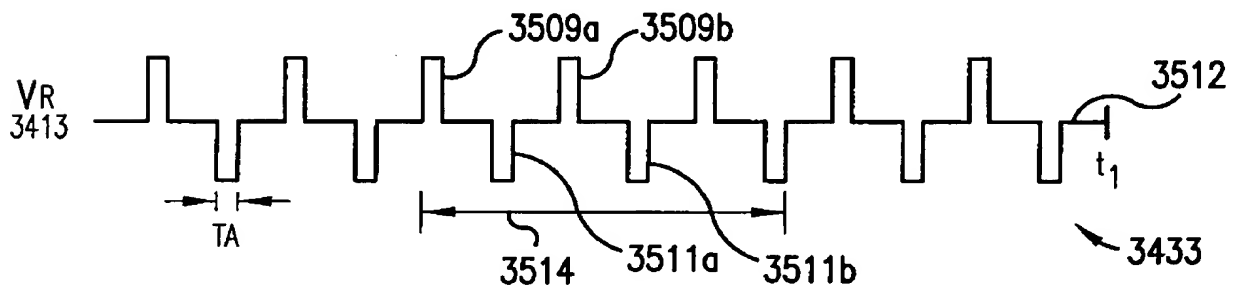


FIG. 35I



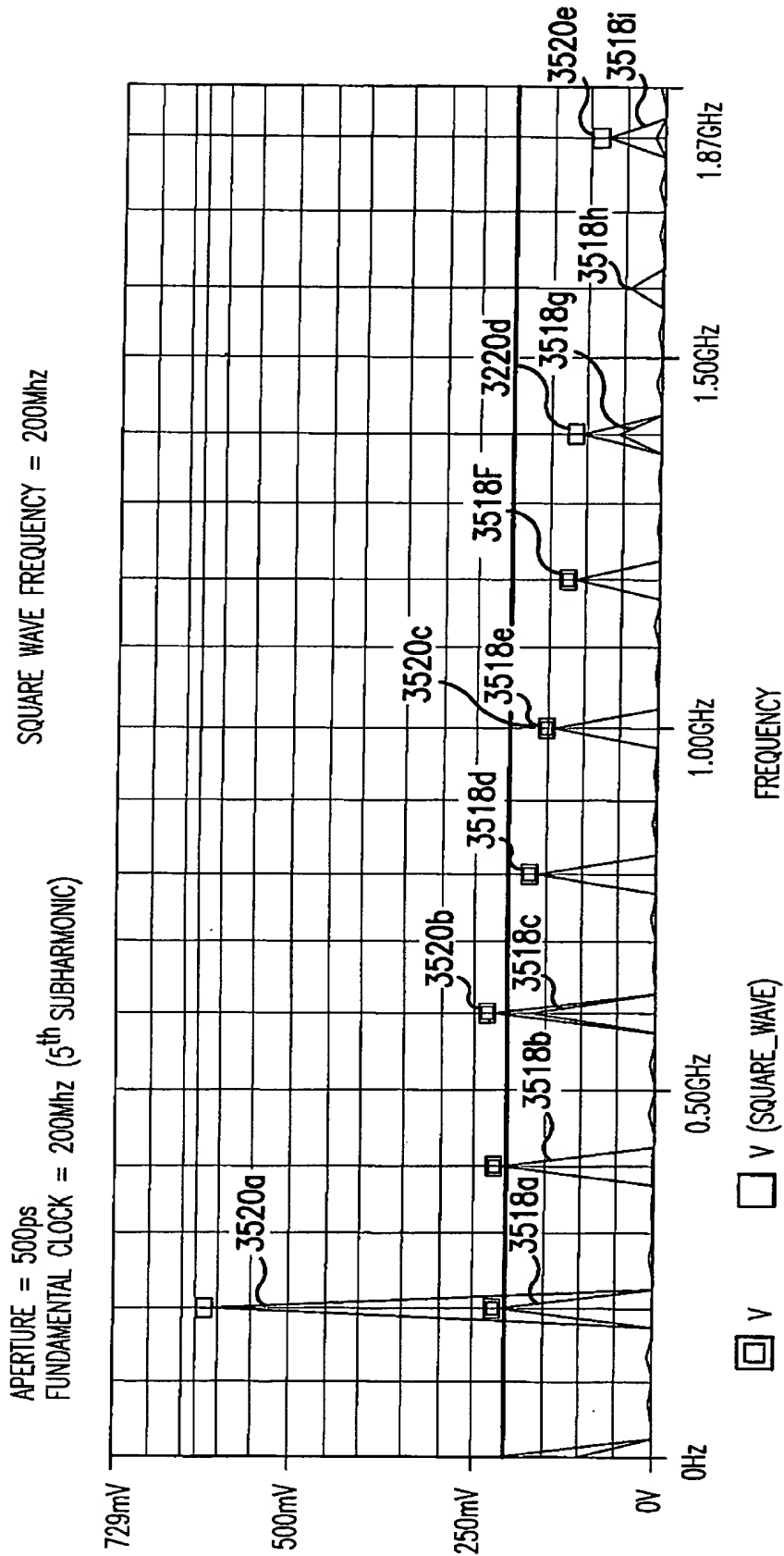


FIG.35J

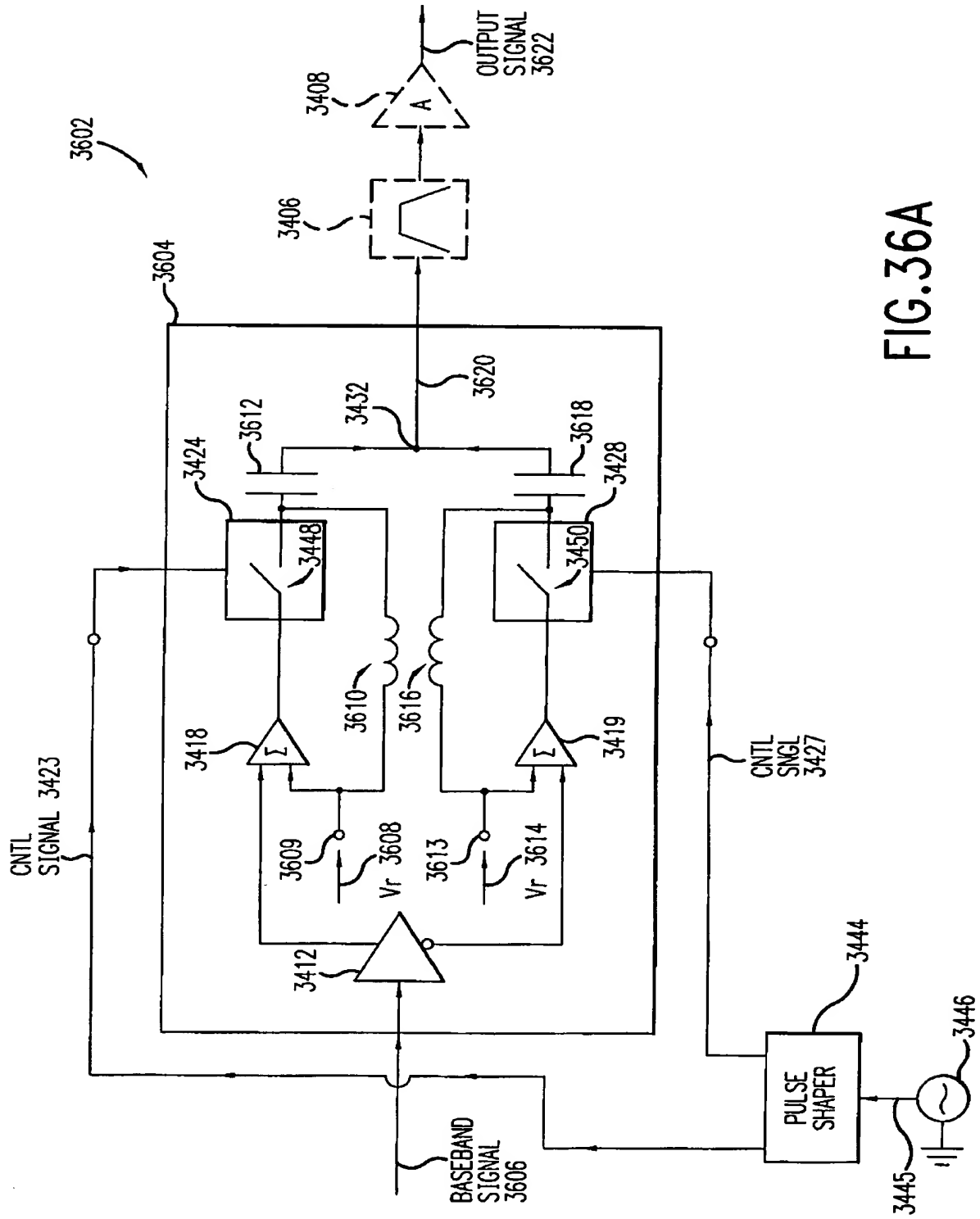


FIG. 36A

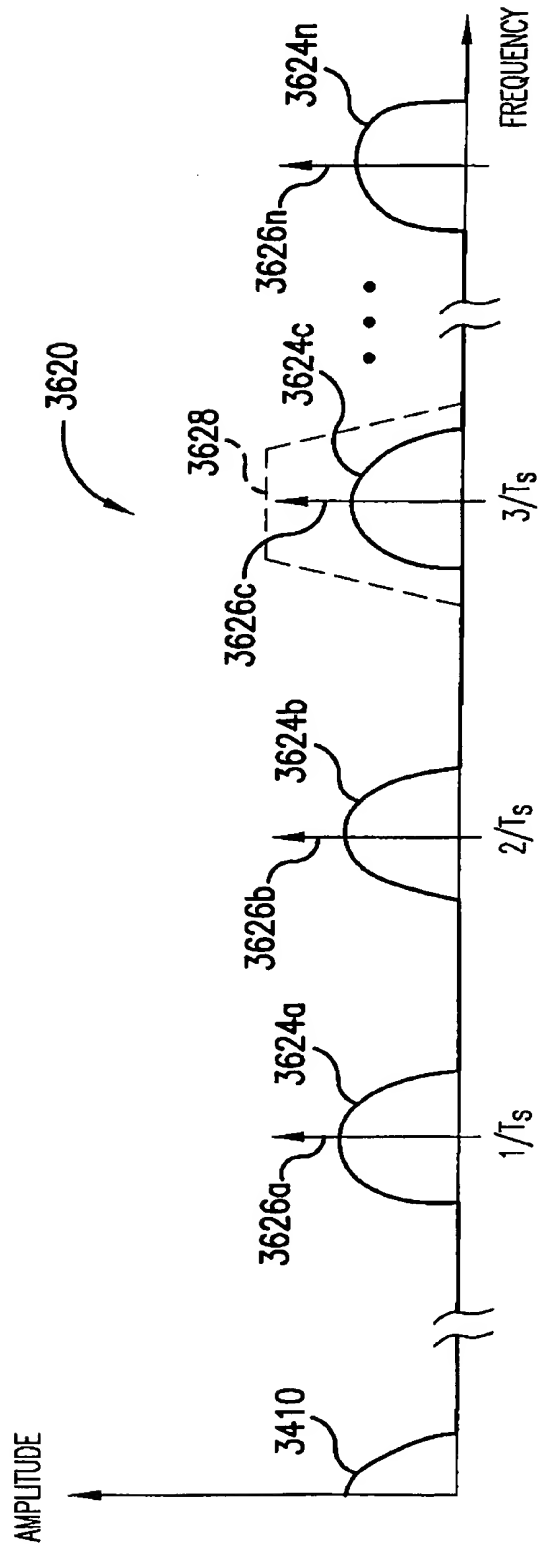


FIG. 36B

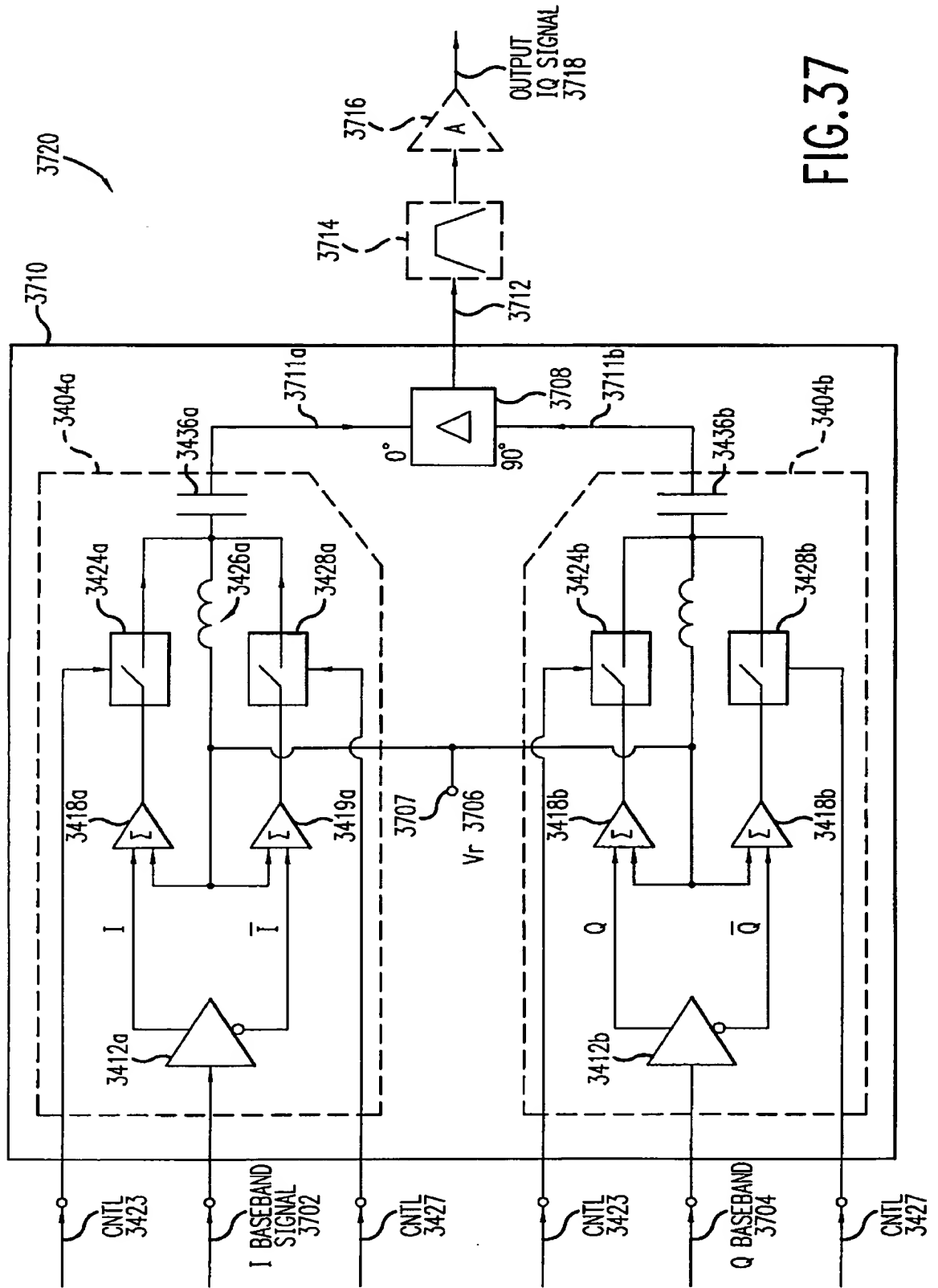


FIG. 37

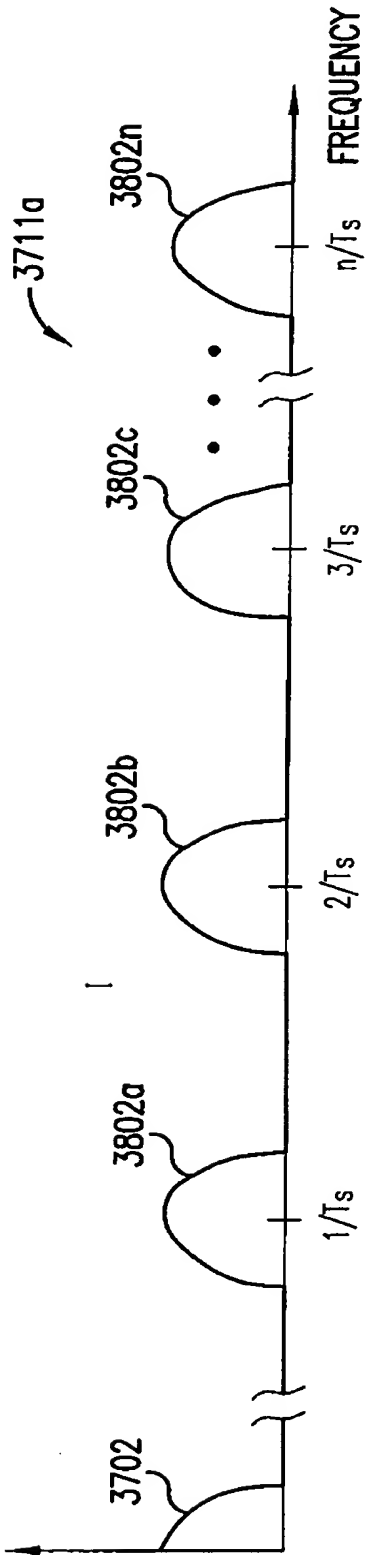


FIG. 38A

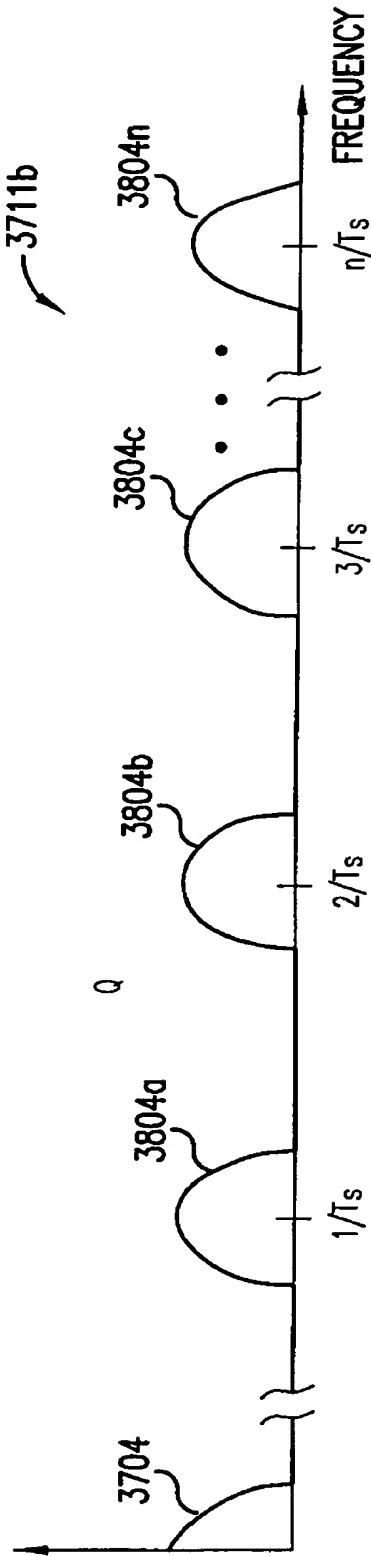


FIG. 38B

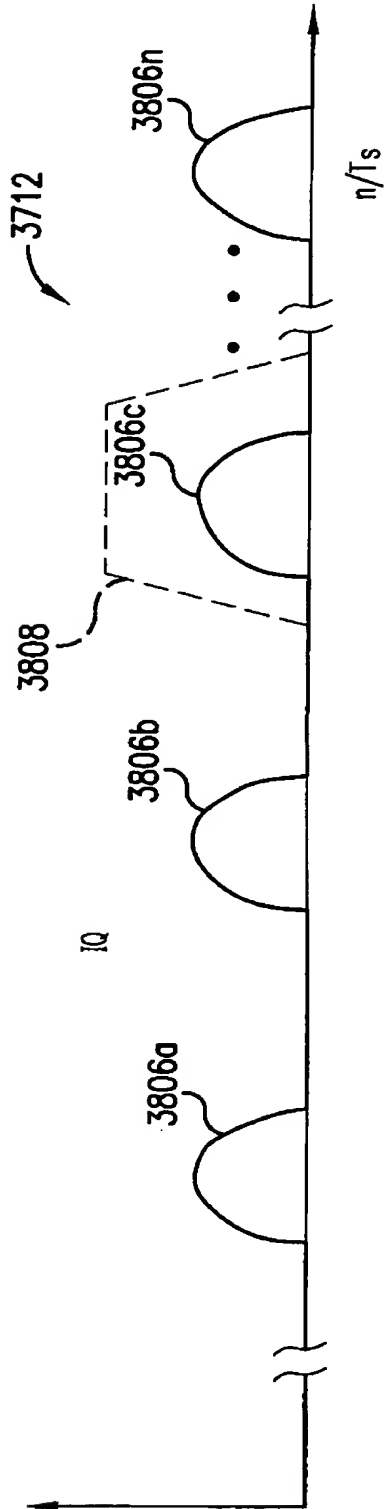


FIG. 38C



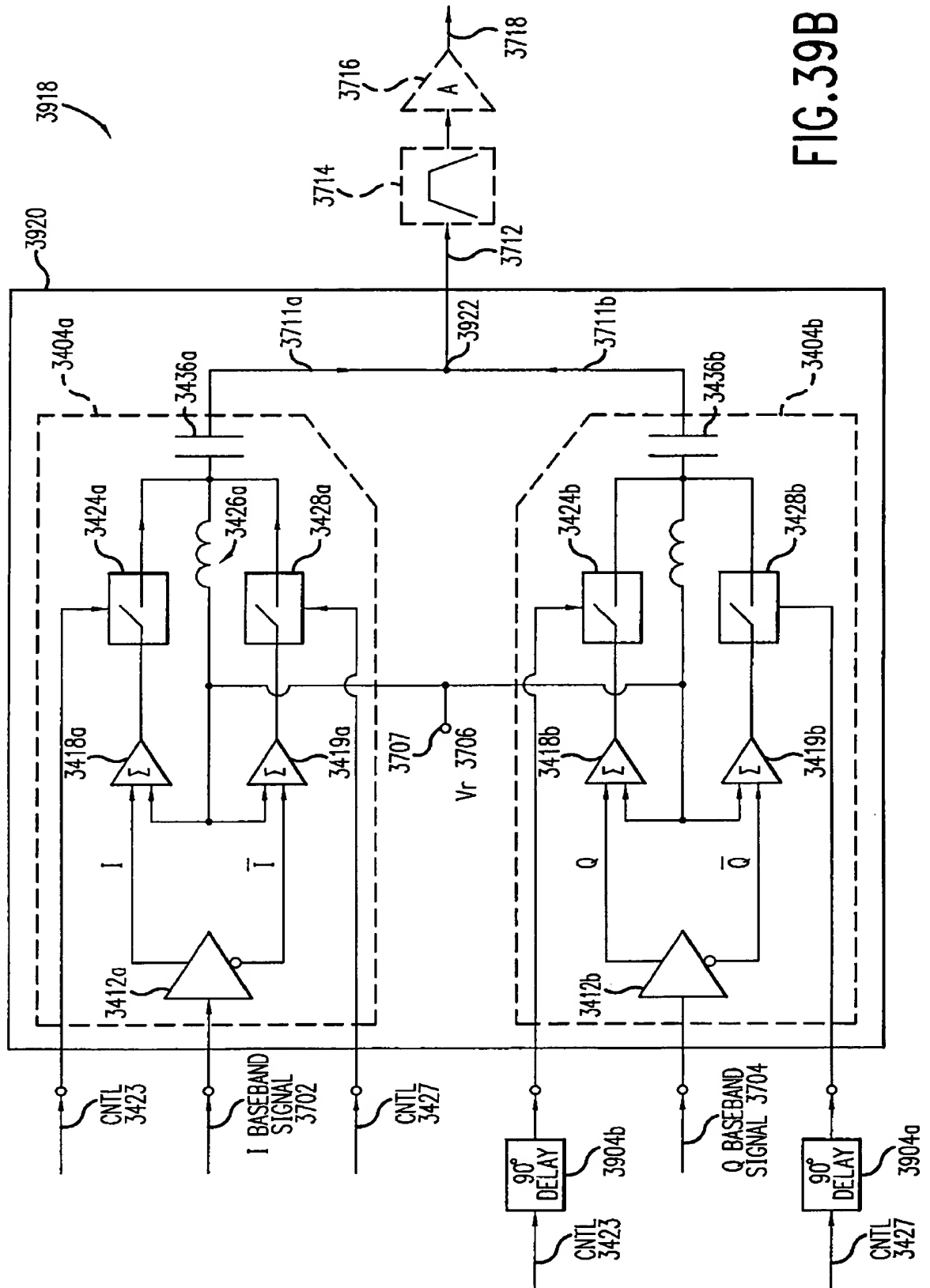


FIG. 39B



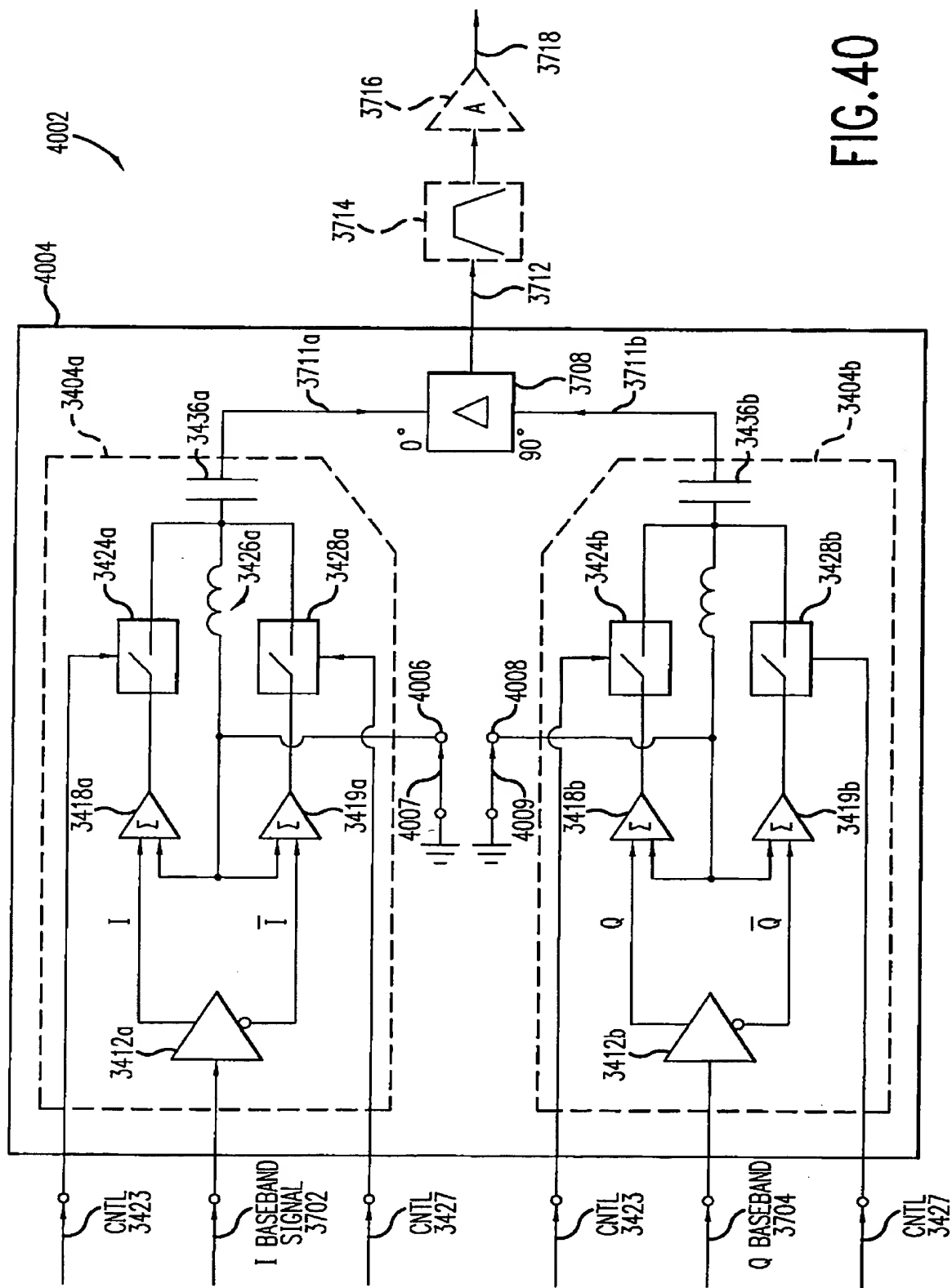
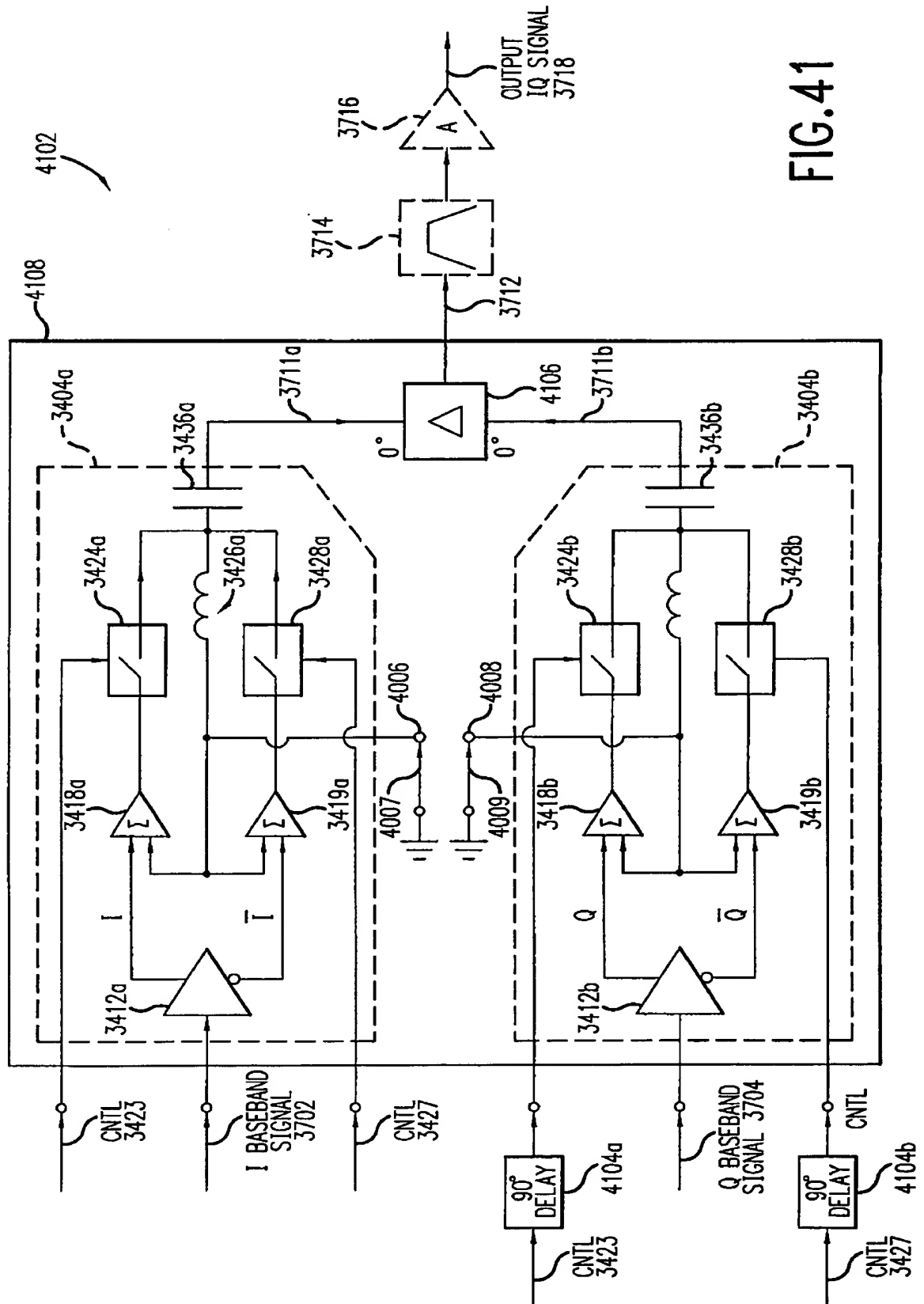


FIG. 40



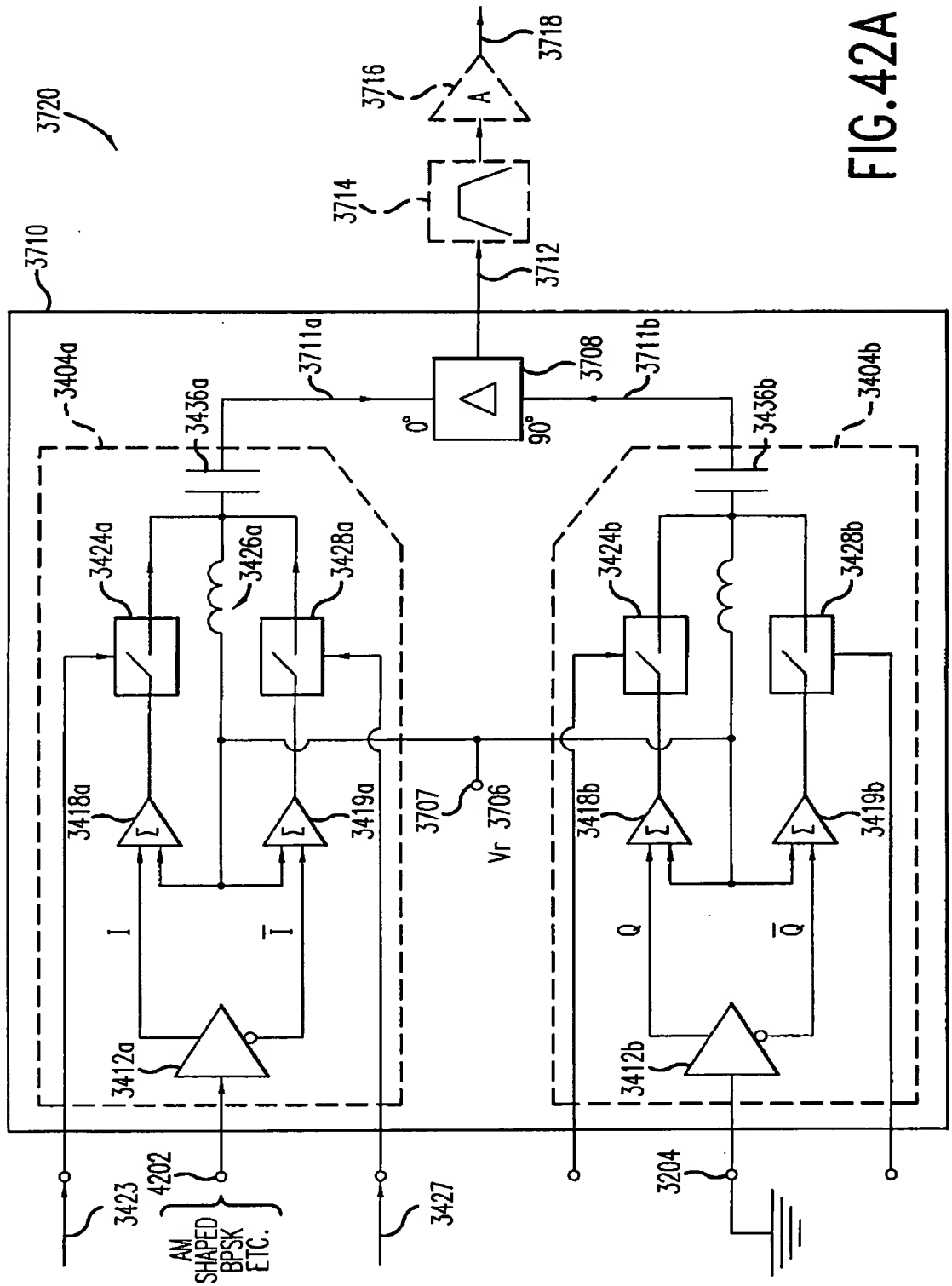


FIG. 42A

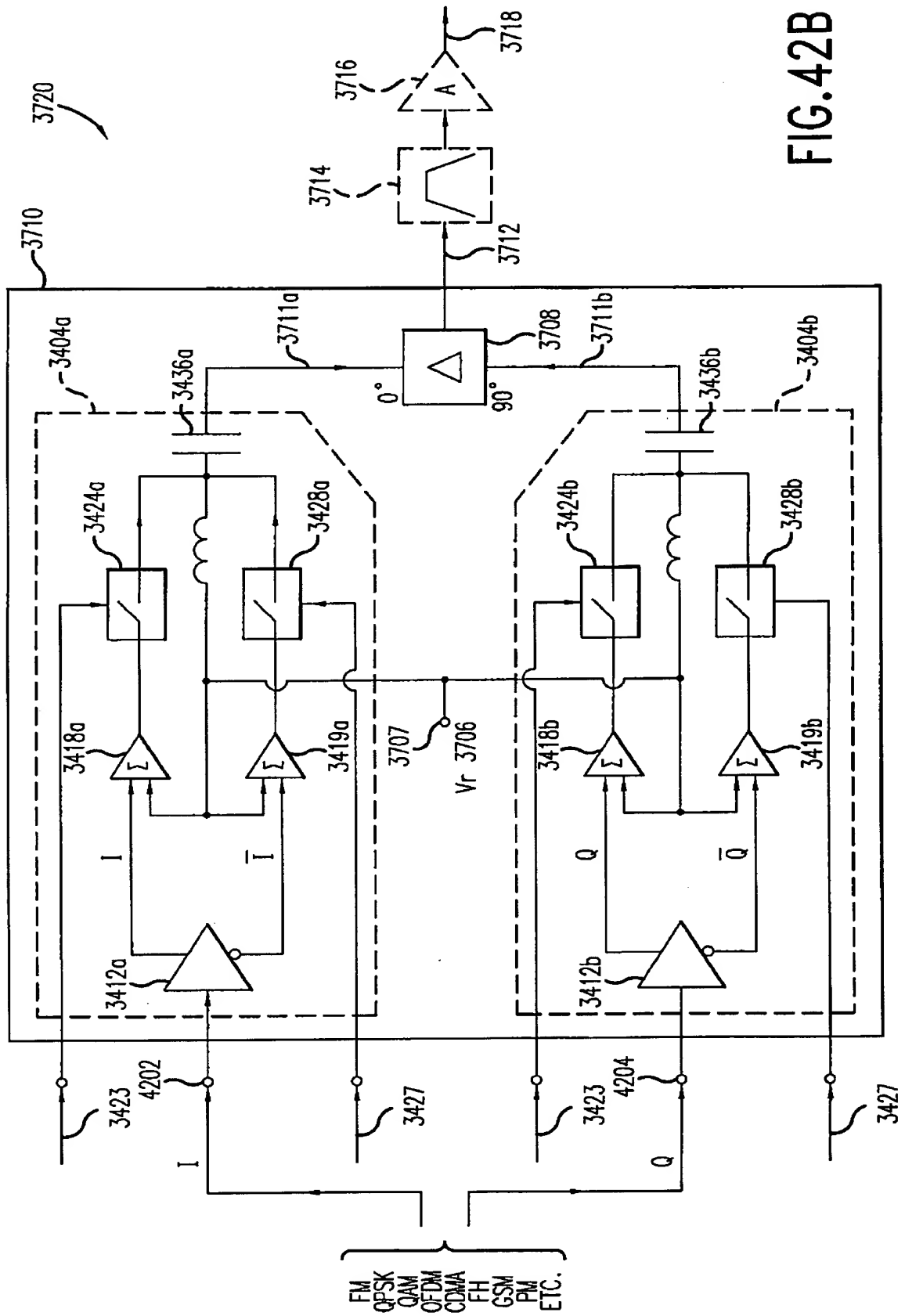


FIG. 42B

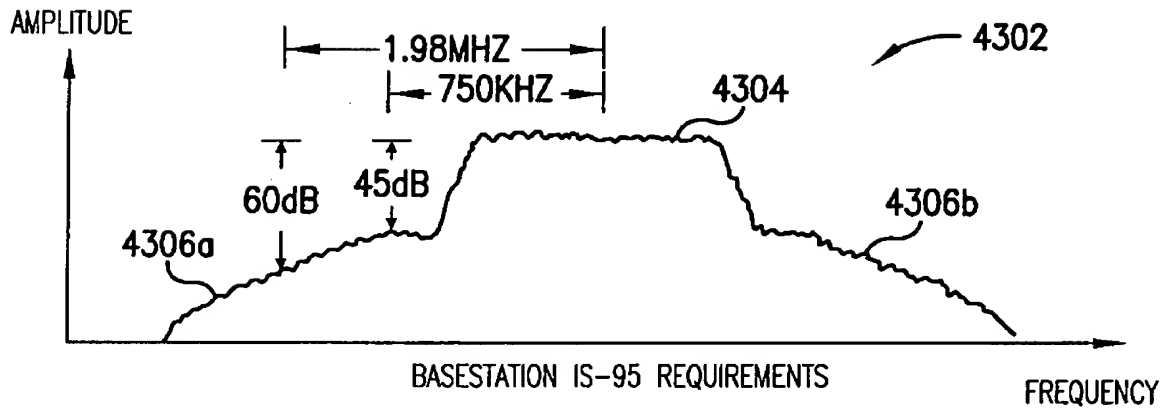


FIG. 43A

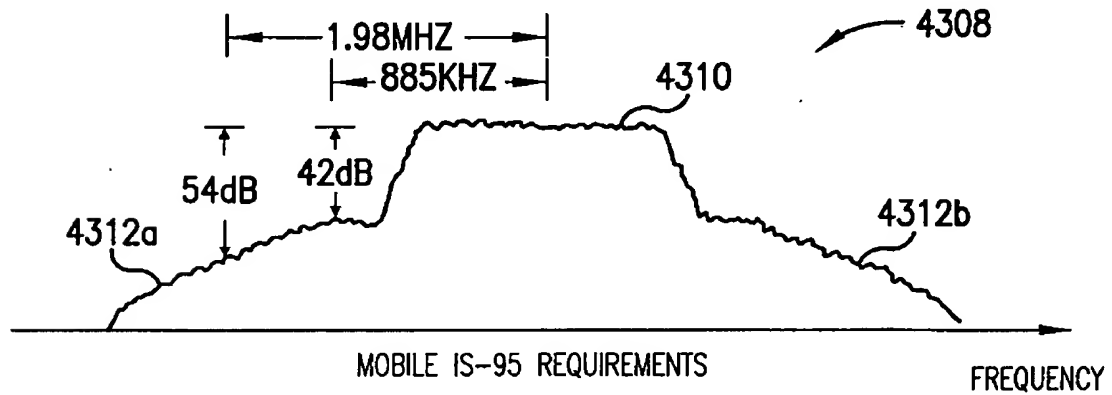
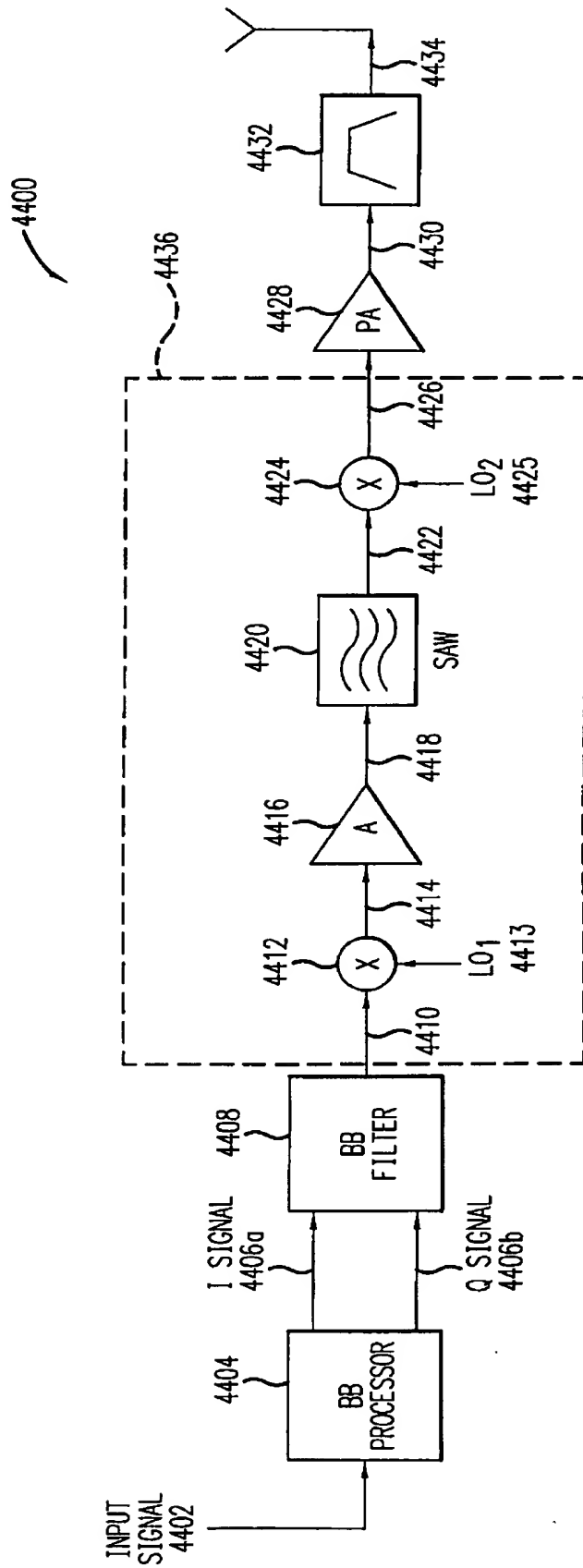


FIG. 43B



CONVENTIONAL TRANSMITTER

FIG. 44

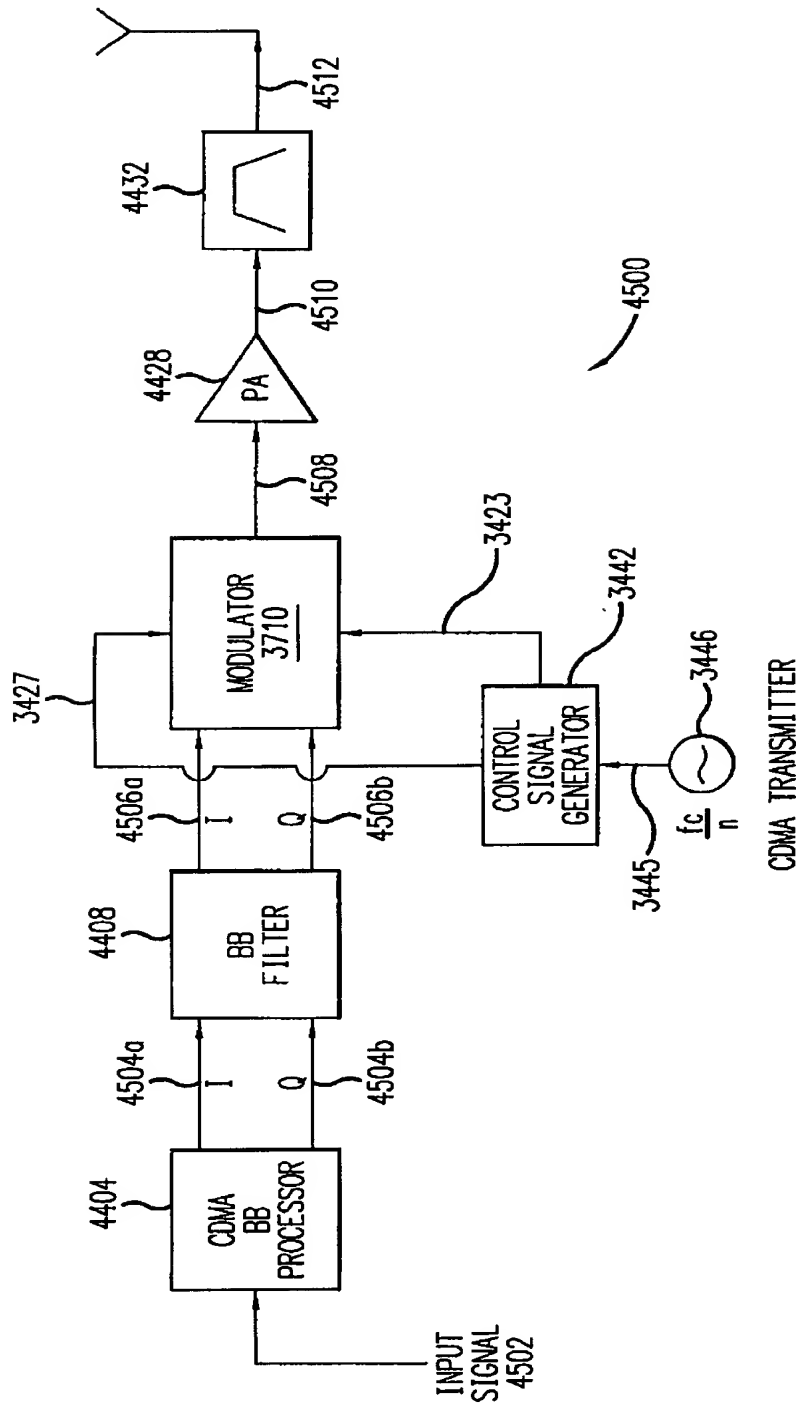


FIG. 45A

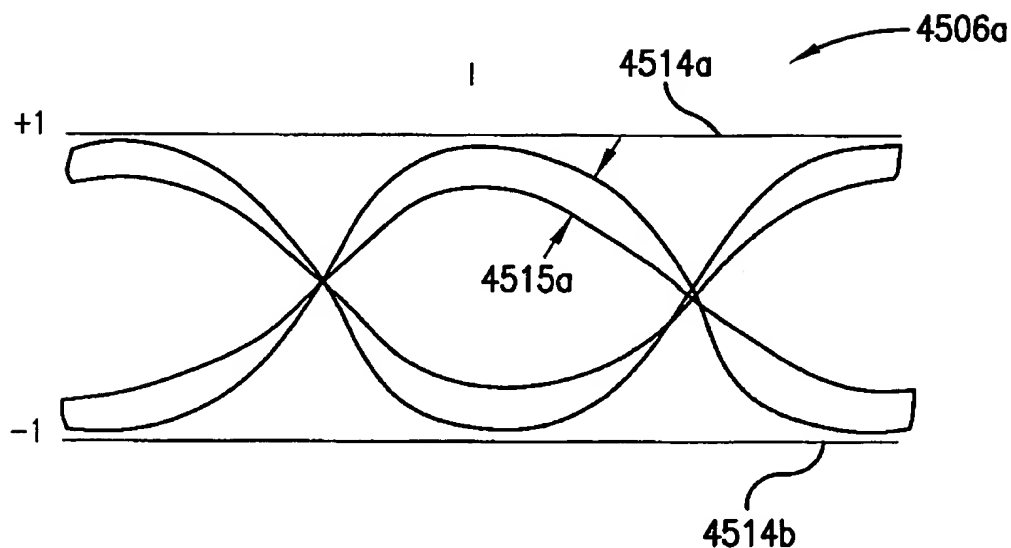


FIG. 45B

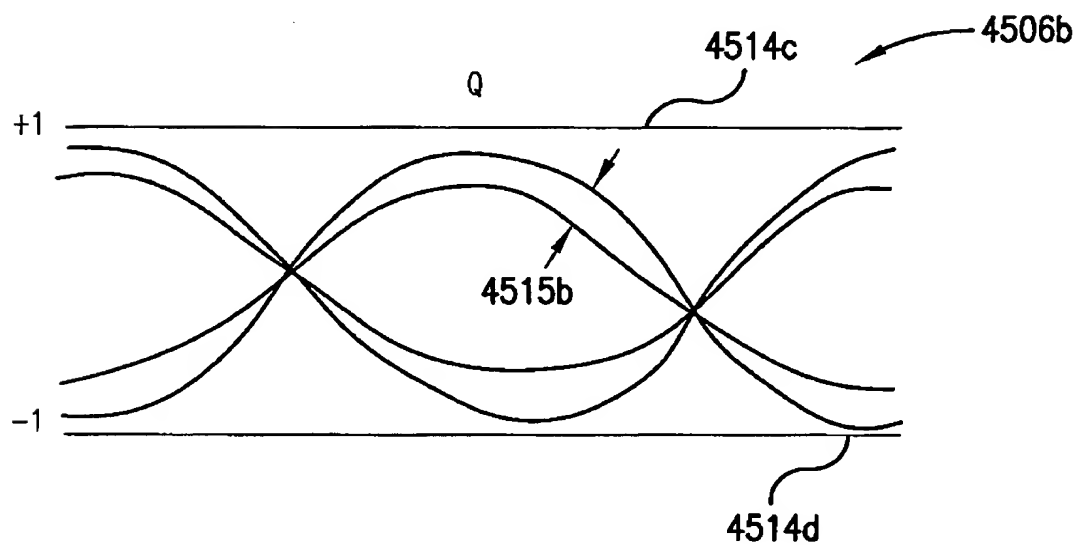


FIG. 45C



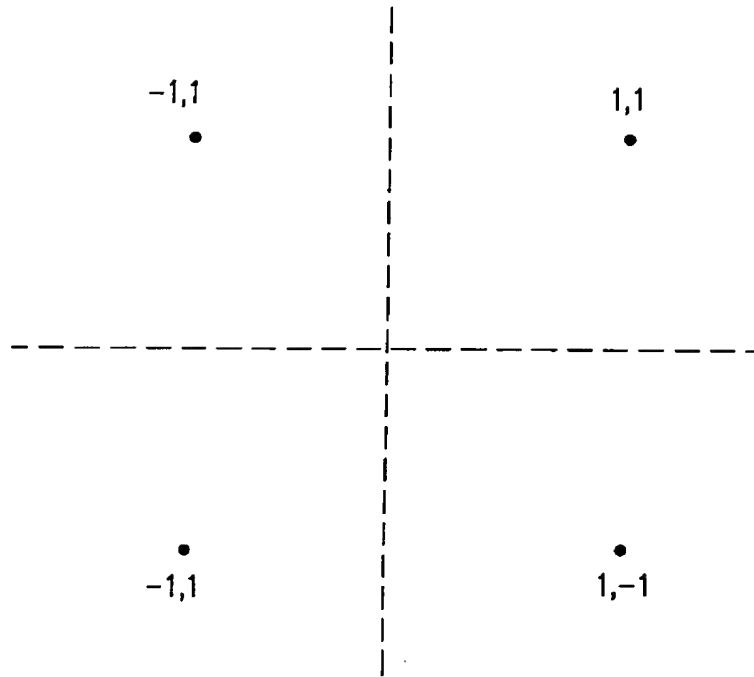


FIG.45D

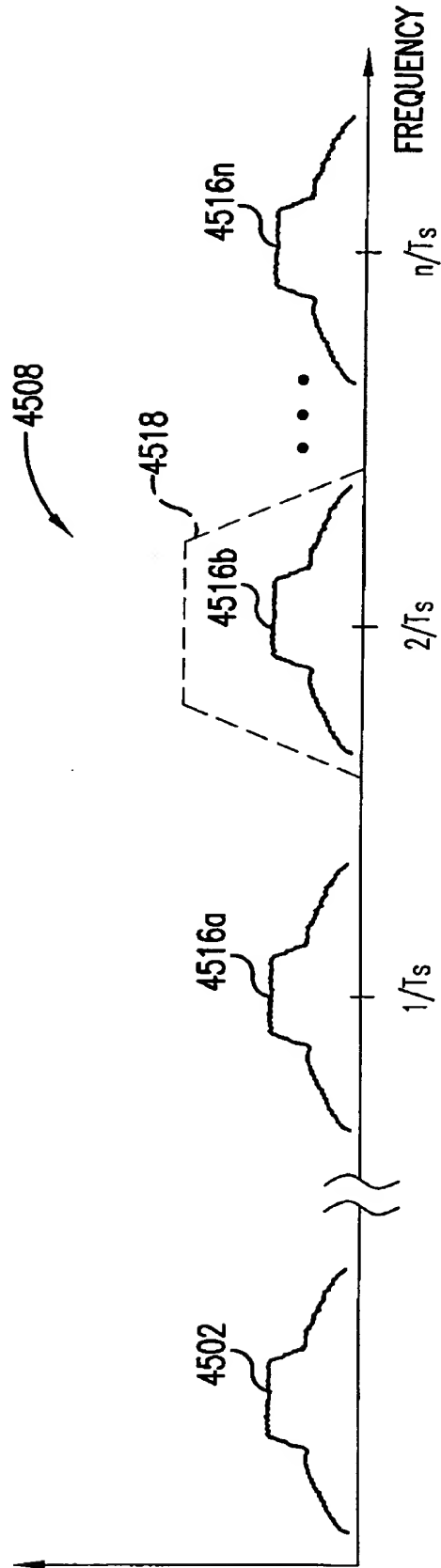


FIG. 45E

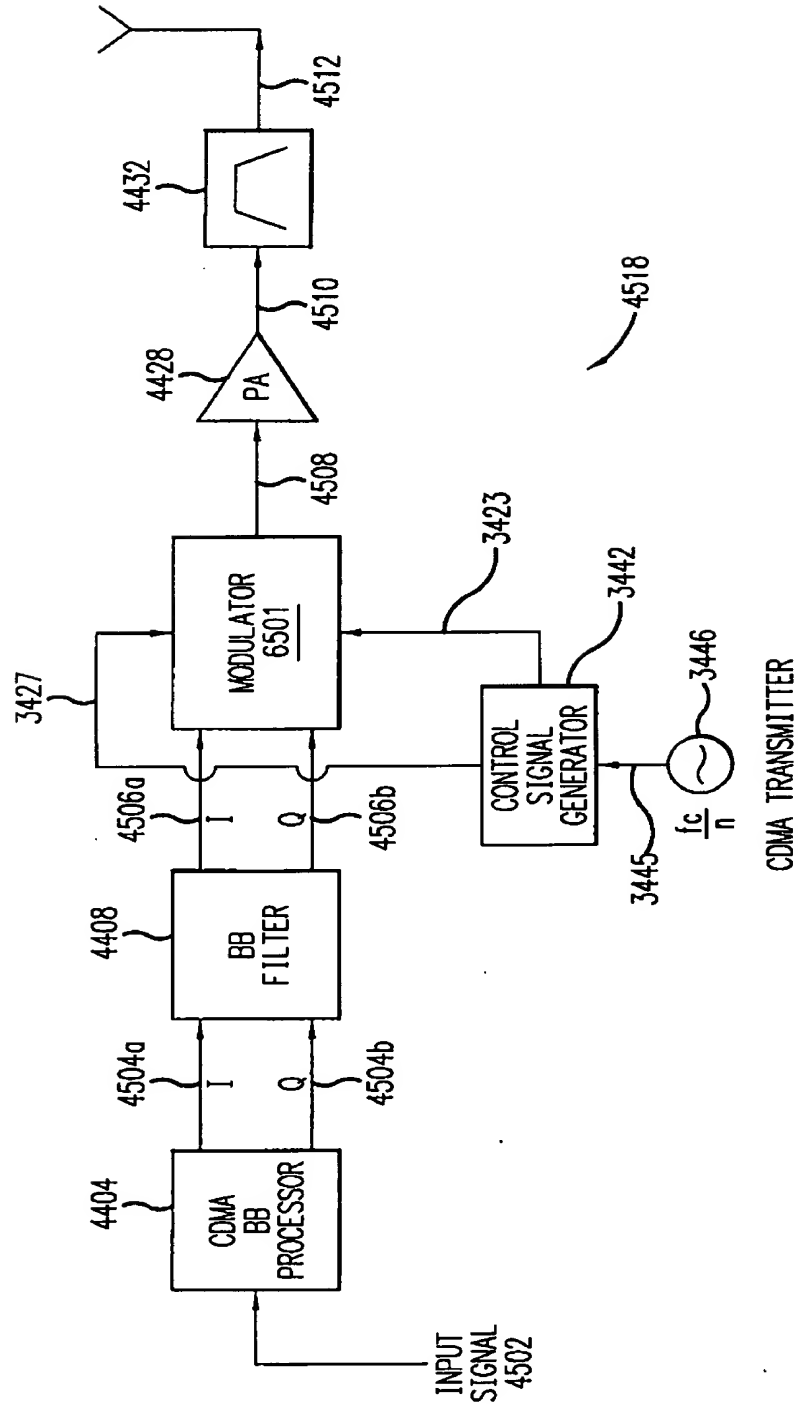


FIG. 45F

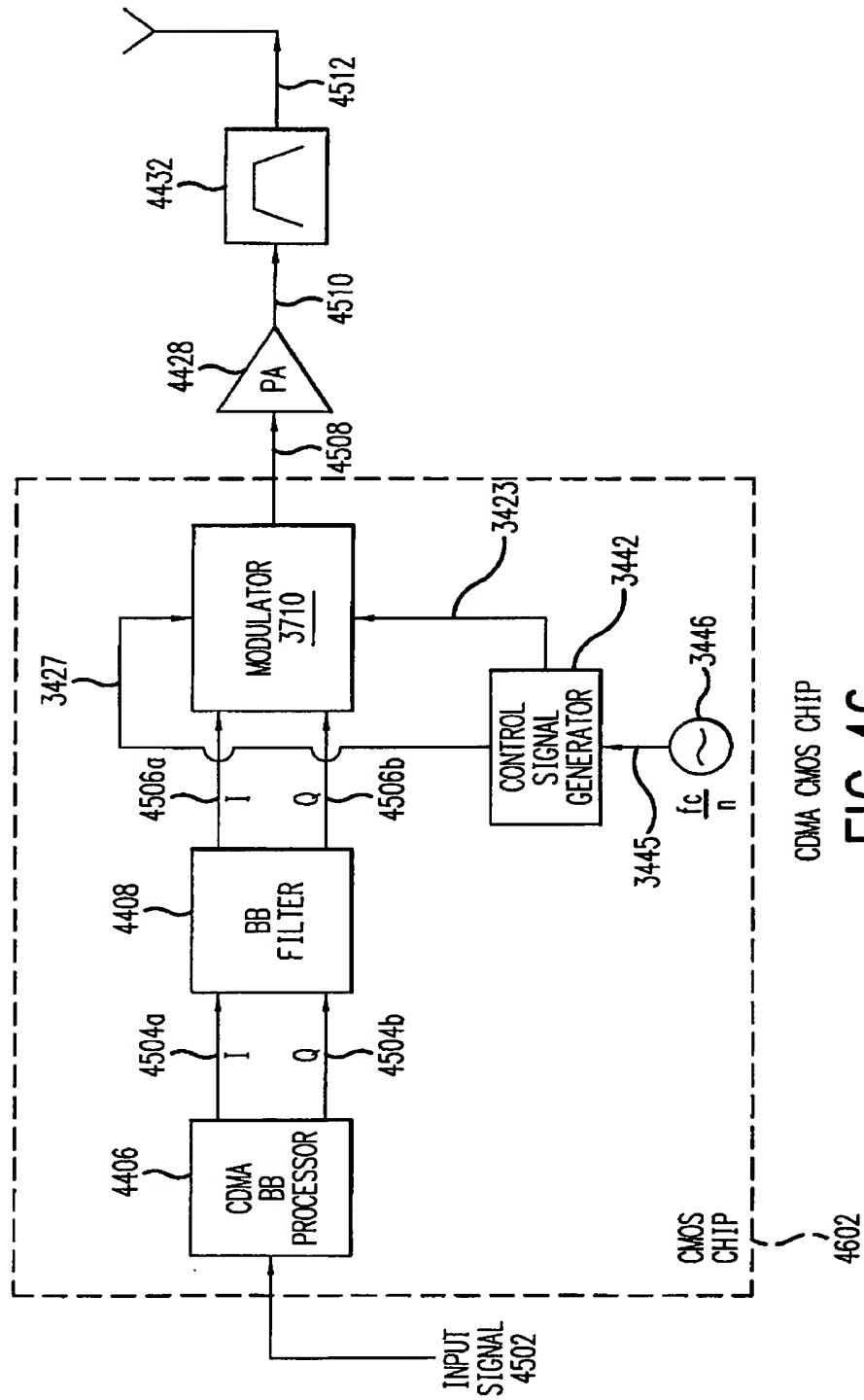


FIG.46

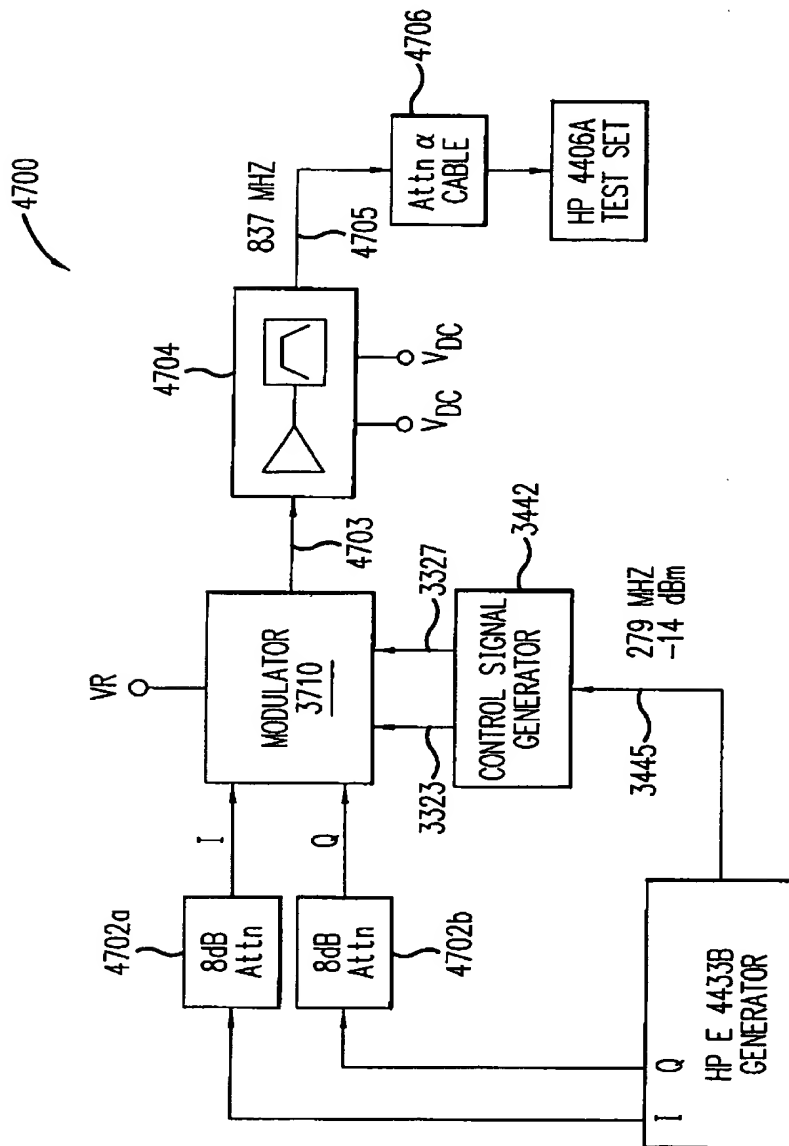


FIG.47

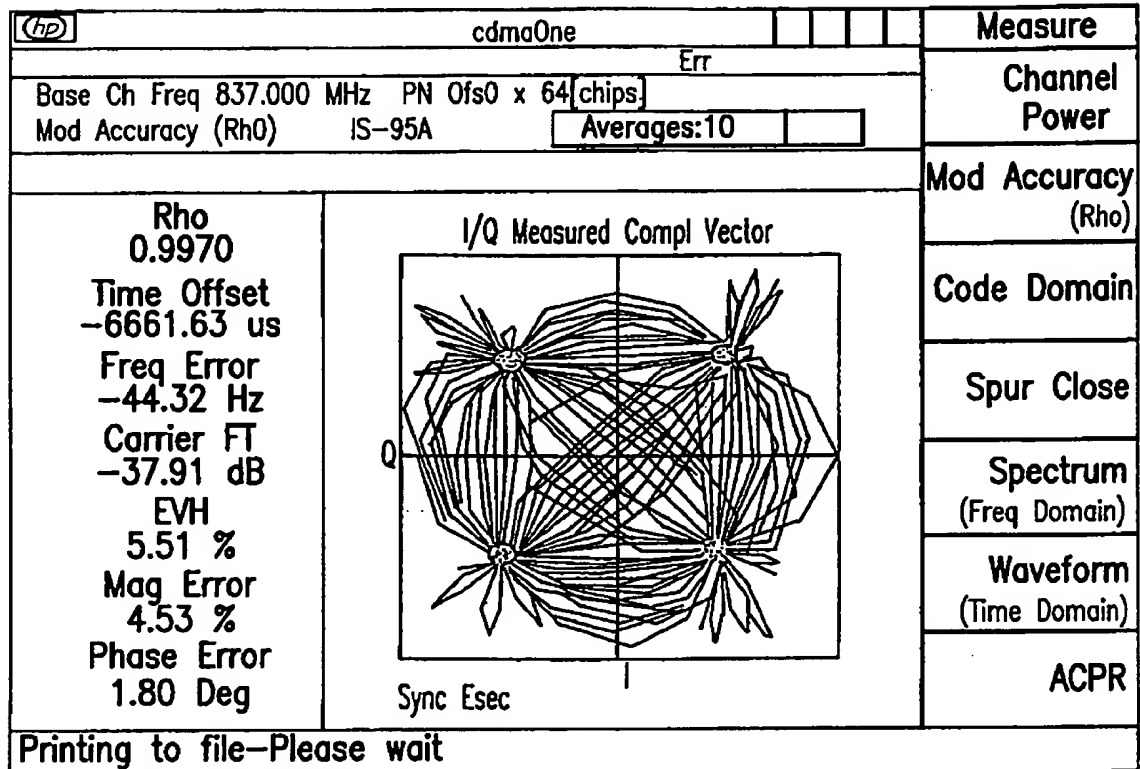
4802

BASE STATION	
RHO	0.9970
EVM	5.51%
PHASE ERROR	1.80°
MAGNITUDE ERROR	4.53%
CARRIER INSERTION	-37.91 dB
PA POWER OUT	28.06 dBm

FIG.48

FREQUENCY (MHz) (MOBILE STATION)				4902
	LOW	MIDDLE	HIGH	
RHO	0.9892	0.9969	0.9892	
EVM	10.39%	5.54%	10.39%	
PHASE ERROR	4.47°	2.24°	4.08°	
MAGNITUDE ERROR	6.84%	4.21%	8.27%	
CARRIER INSERTION	-40.15 dB	-44.58 dB	-35.27 dB	
PA POWER OUT	27.36 dBm	28.11 dBm	27.55 dBm	

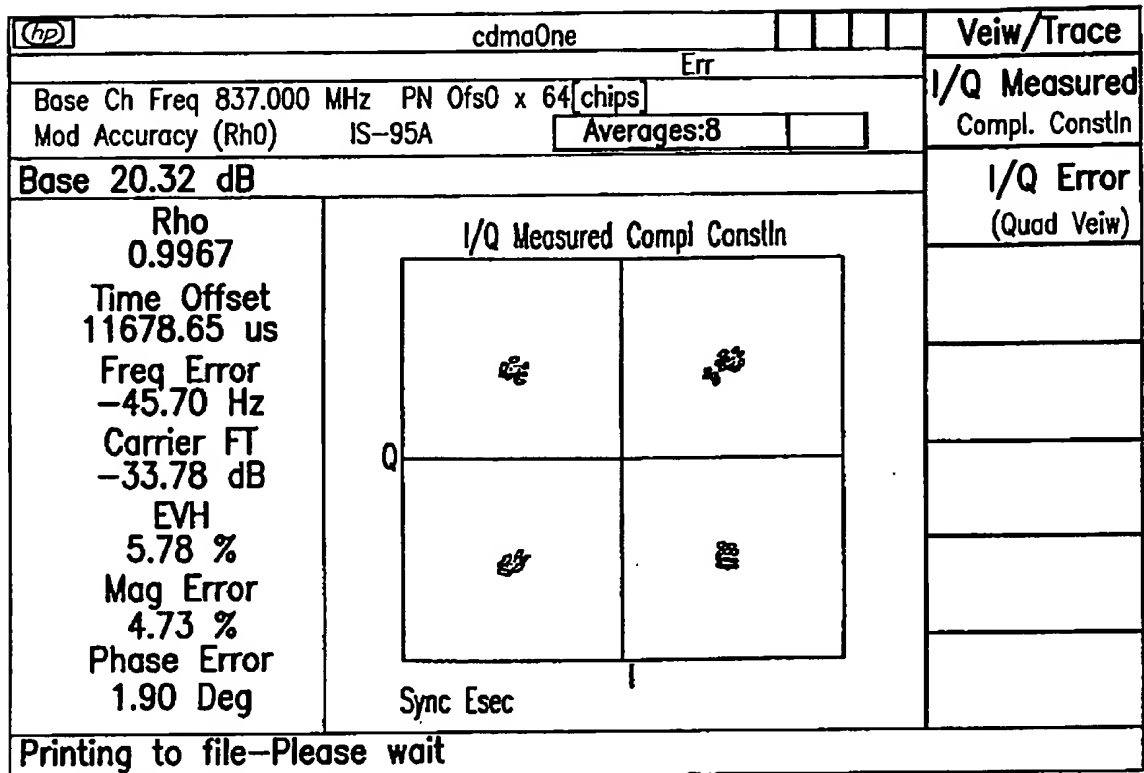
FIG.49



BASE STATION CONSTELLATION FOR PILOT CHANNEL TEST

FIG.50

5002

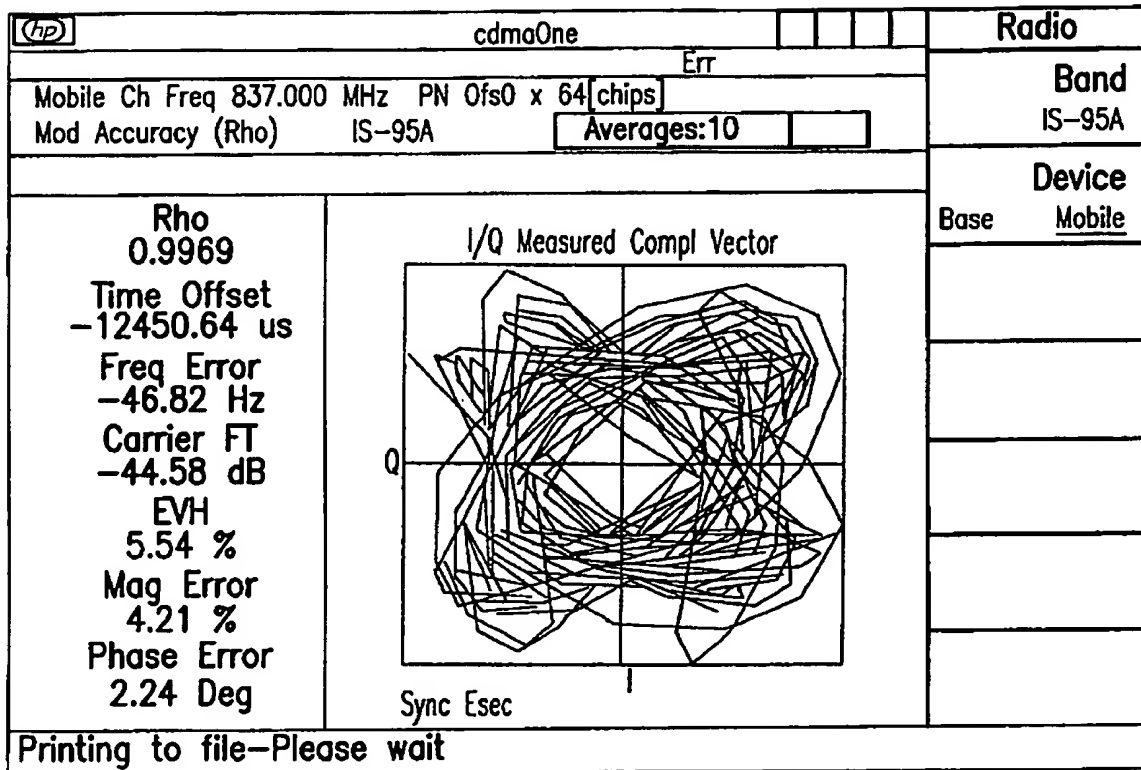


BASE STATION SAMPLED CONSTELLATION

FIG.51

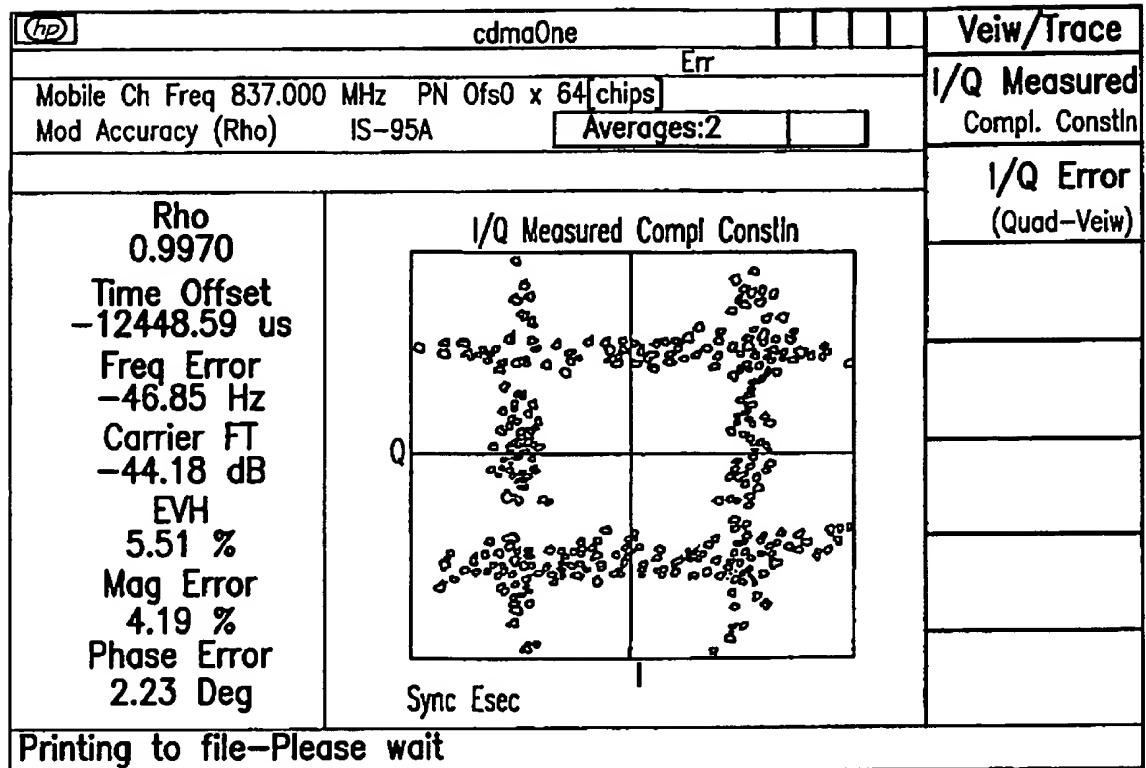
5102





MOBILE STATION CONSTELLATION FOR ACCESS CHANNEL TEST

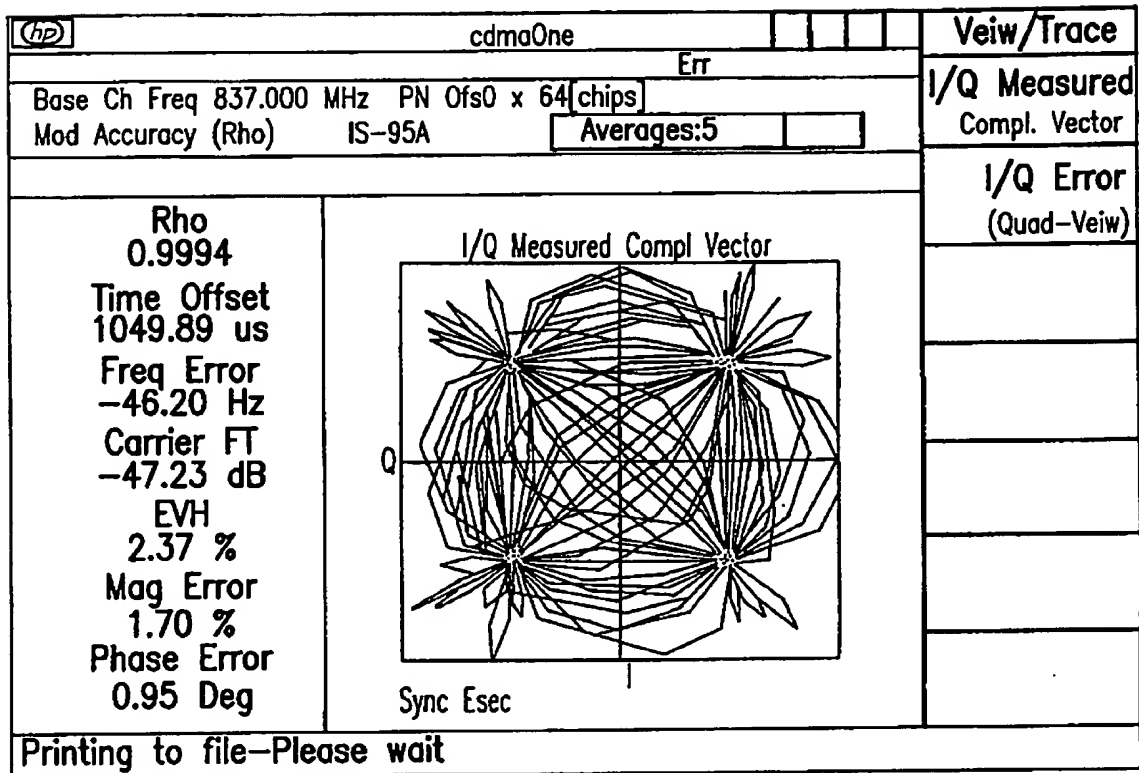
FIG.52



MOBILE STATION SAMPLED CONSTELLATION

FIG.53

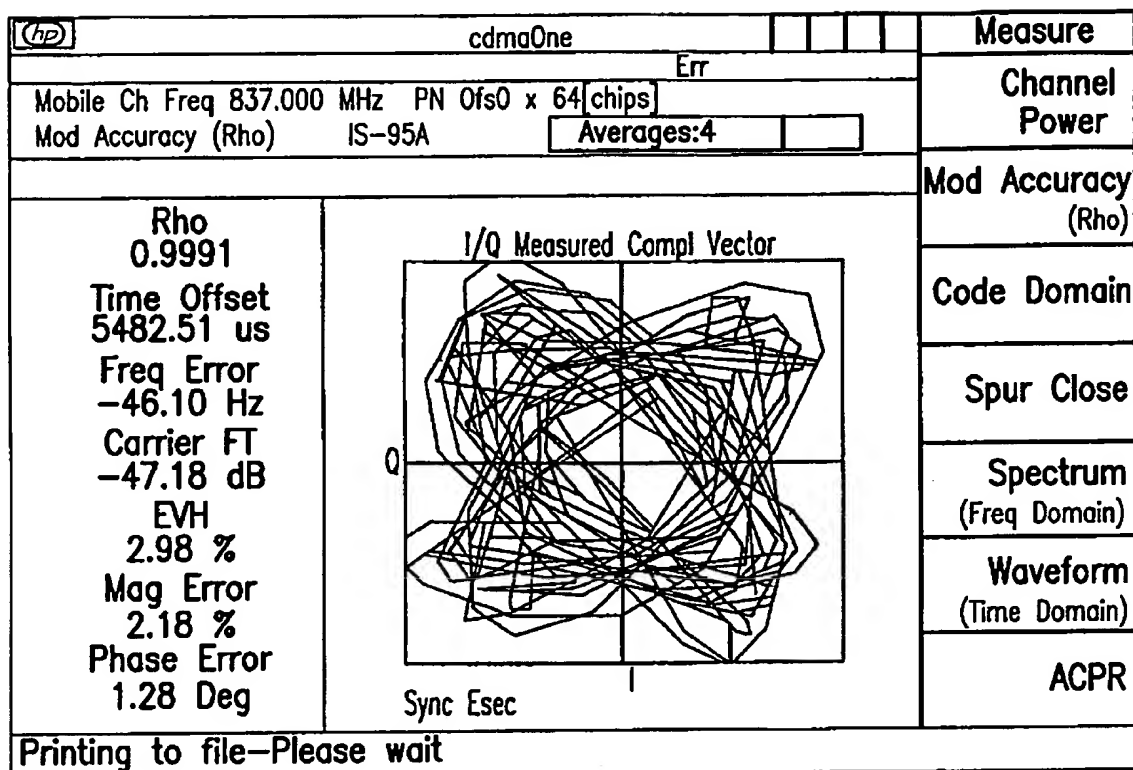
5302



BASE STATION CONSTELLATION USING  
 ONLY H/P TEST EQUIPMENT

FIG.54

5402



MOBILE CONSTELLATION USING ONLY H/P TEST EQUIPMENT

FIG.55

5502

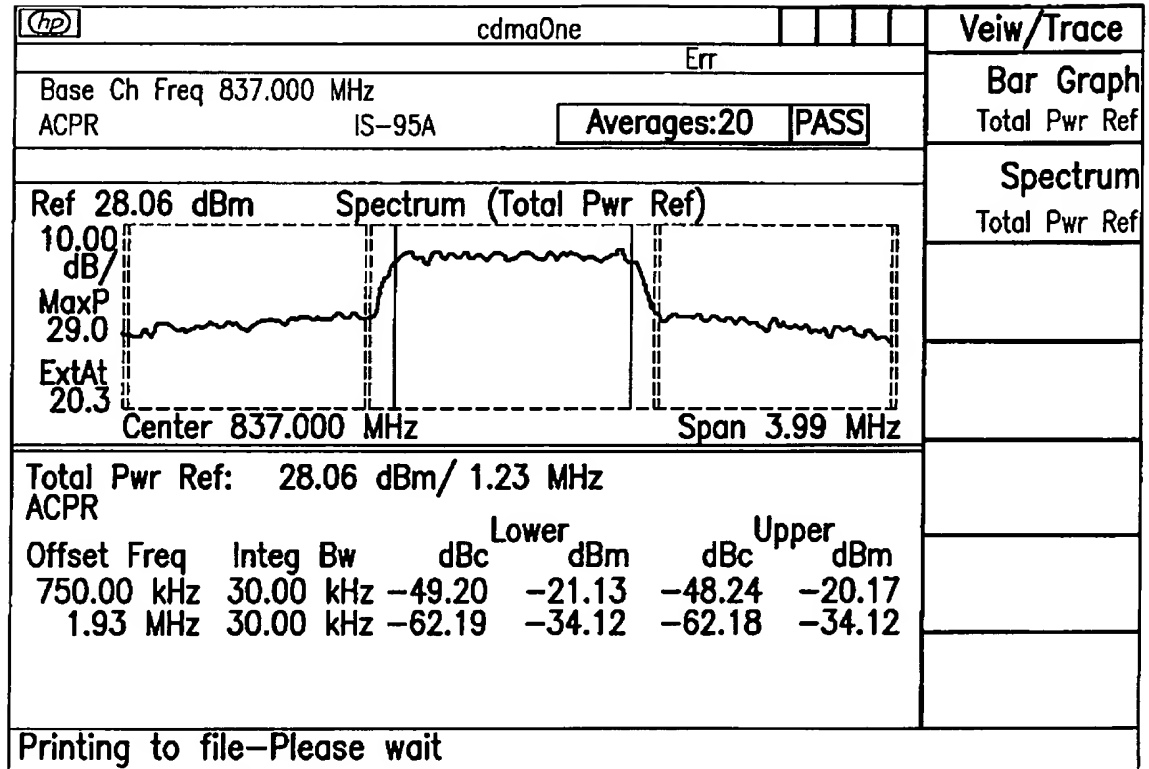
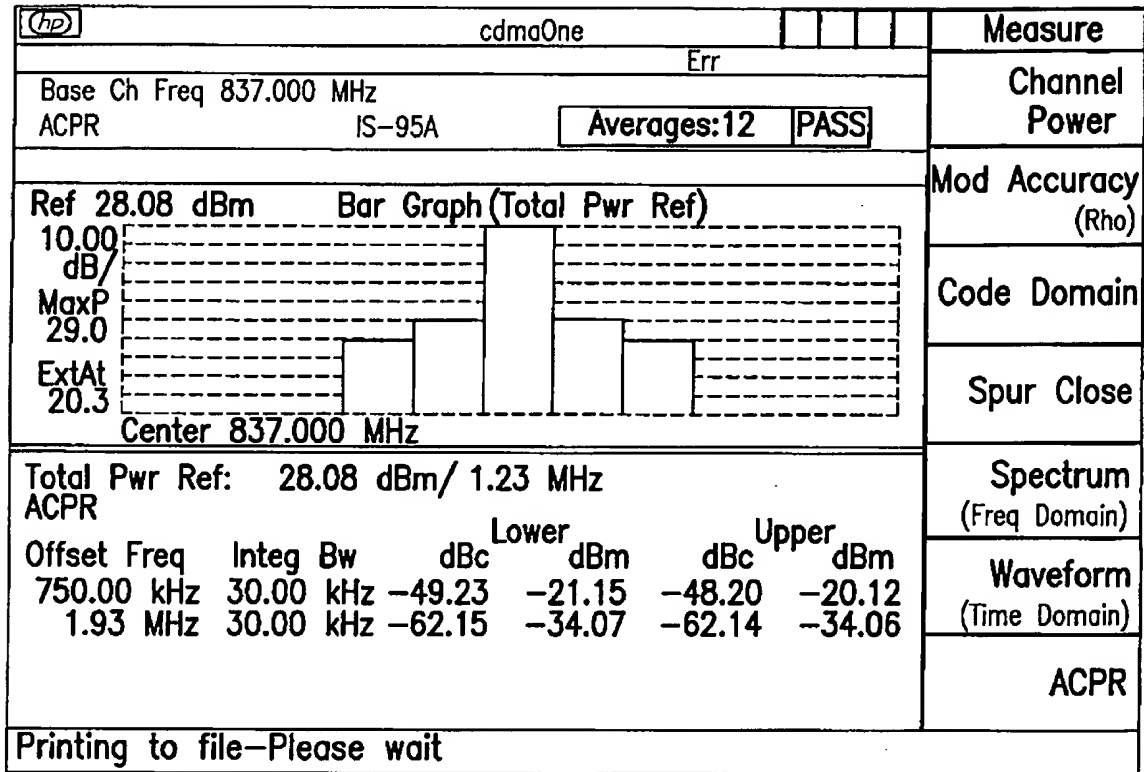


FIG.56

5602



BASE STATION SPECTRAL RESPONSE WITH MASK

FIG.57

5702

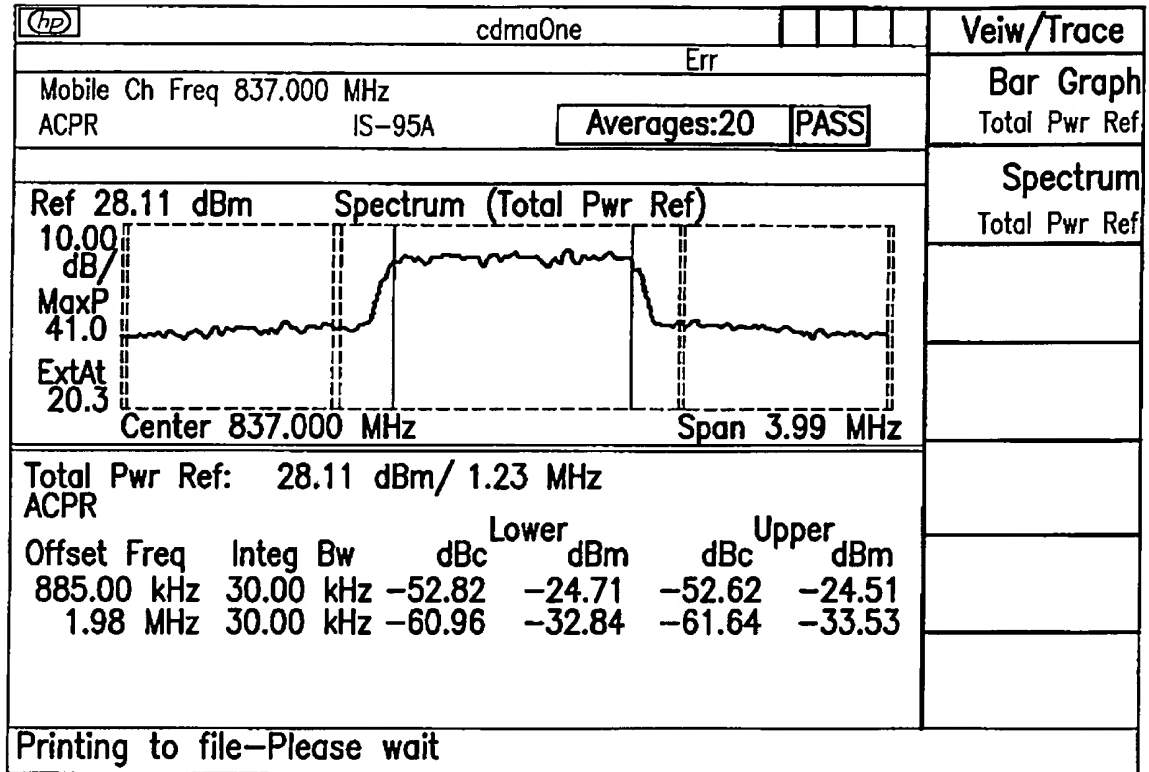
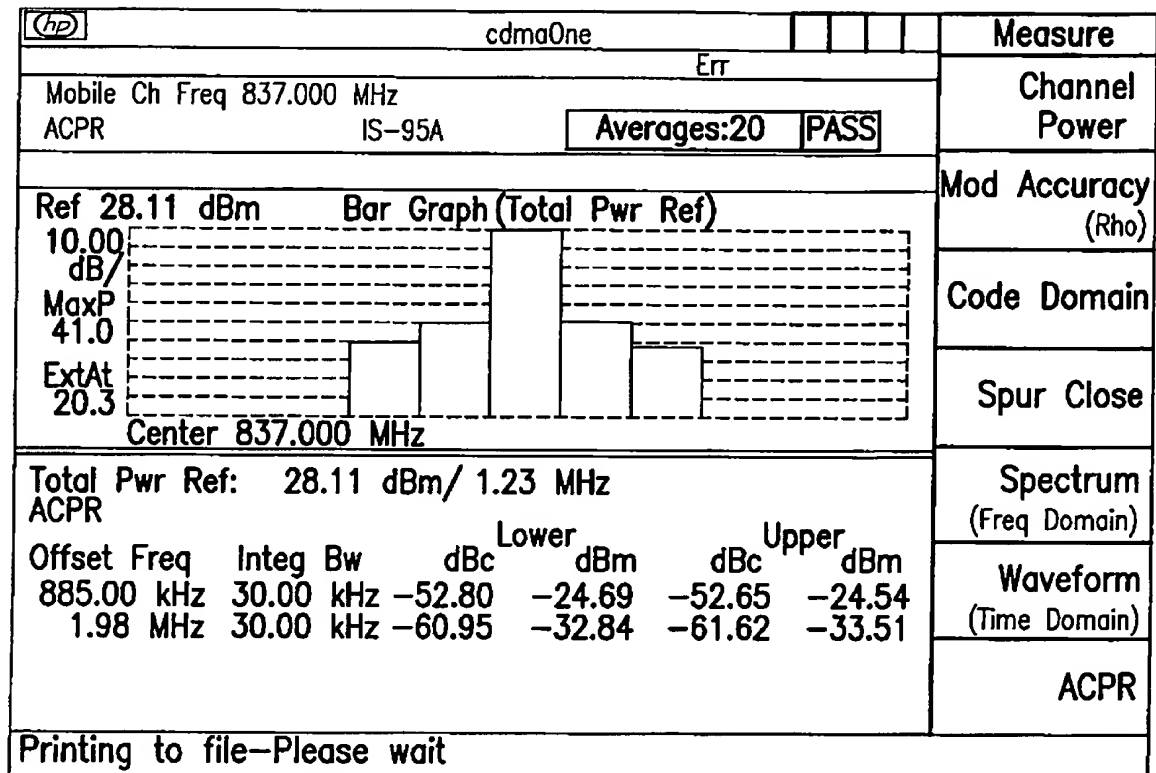


FIG.58

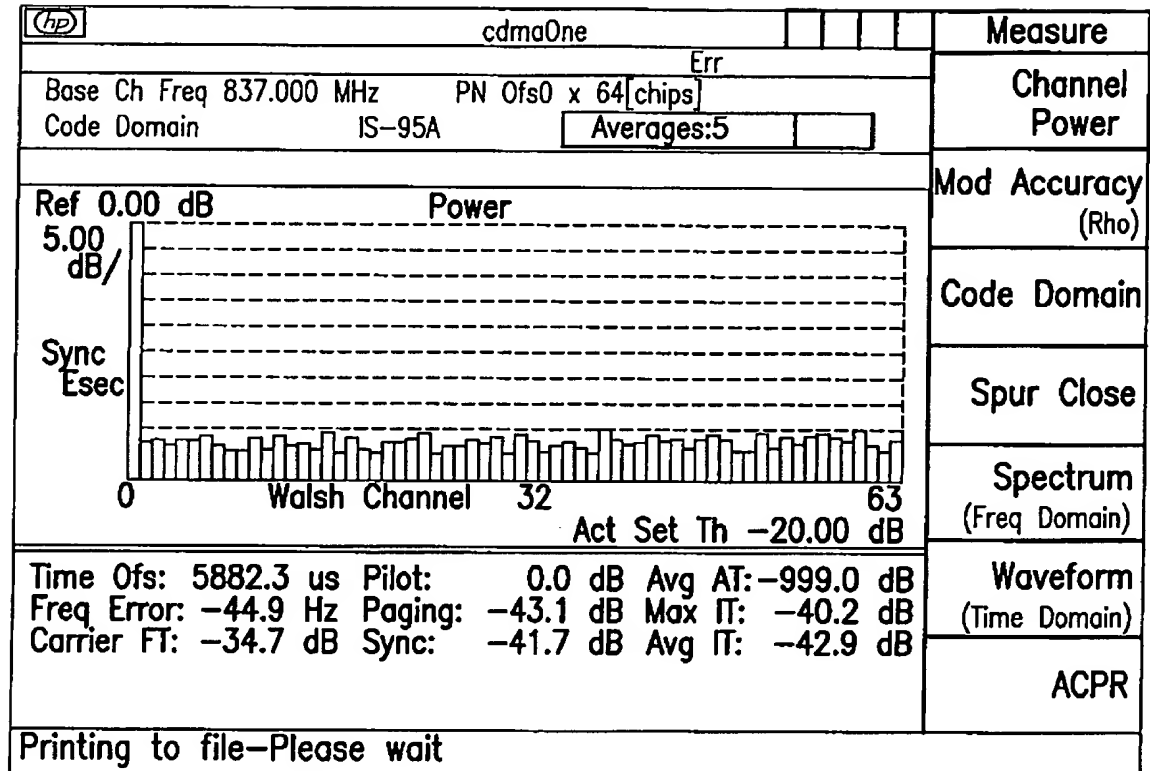
5802



MOBILE STATION SPECTRAL RESPONSE WITH MASK

FIG.59





CDMA CROSSTALK

FIG. 60A

6002

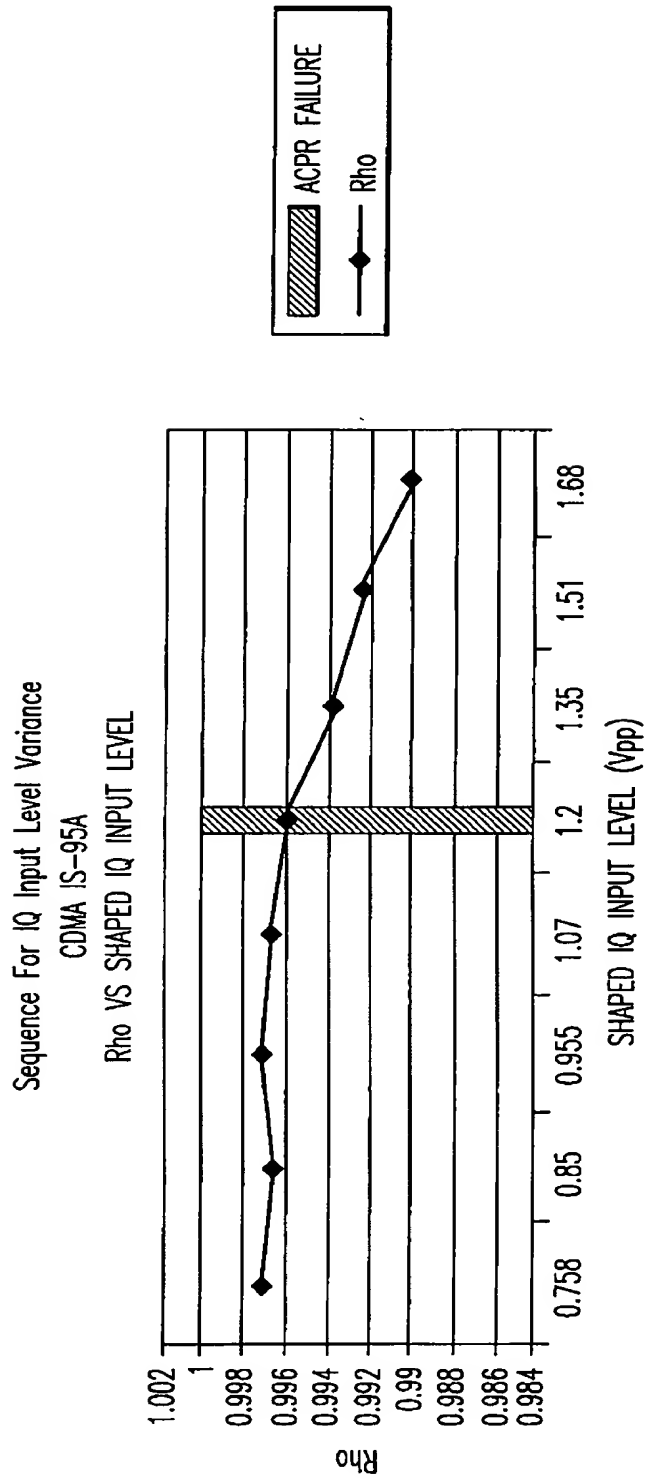


FIG. 60B

CDMA IS-95A  
TRANSMITTED CHANNEL POWER VS SHAPED IQ INPUT  
LEVEL

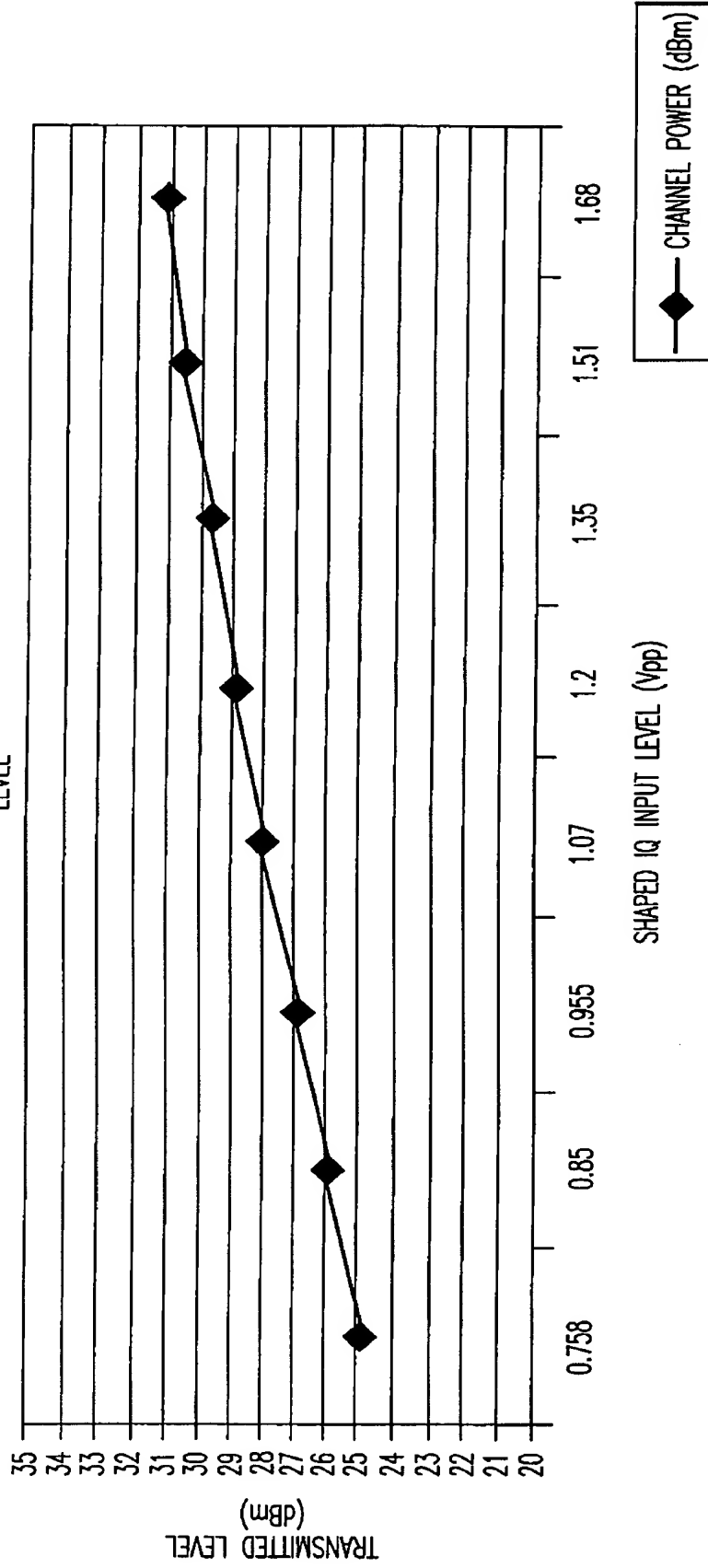


FIG.60C

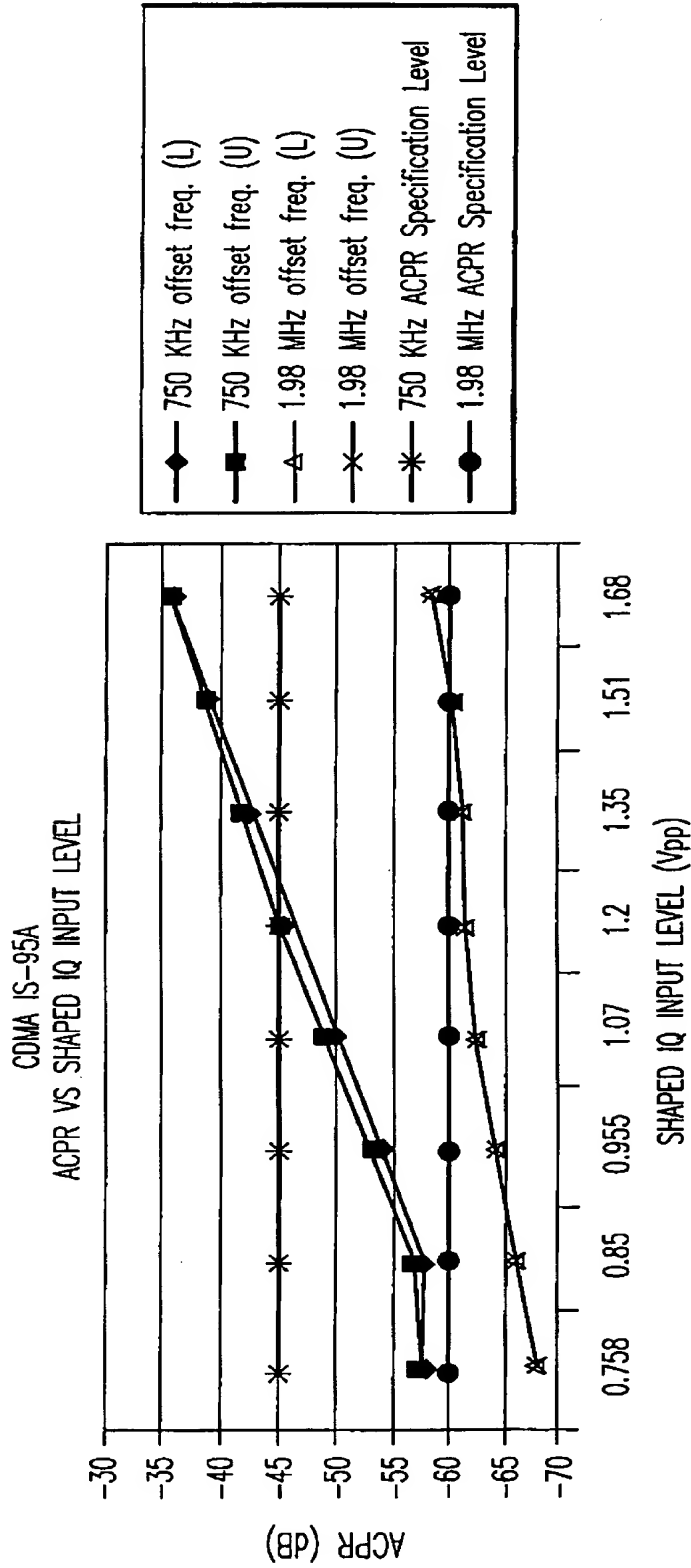


FIG.60D

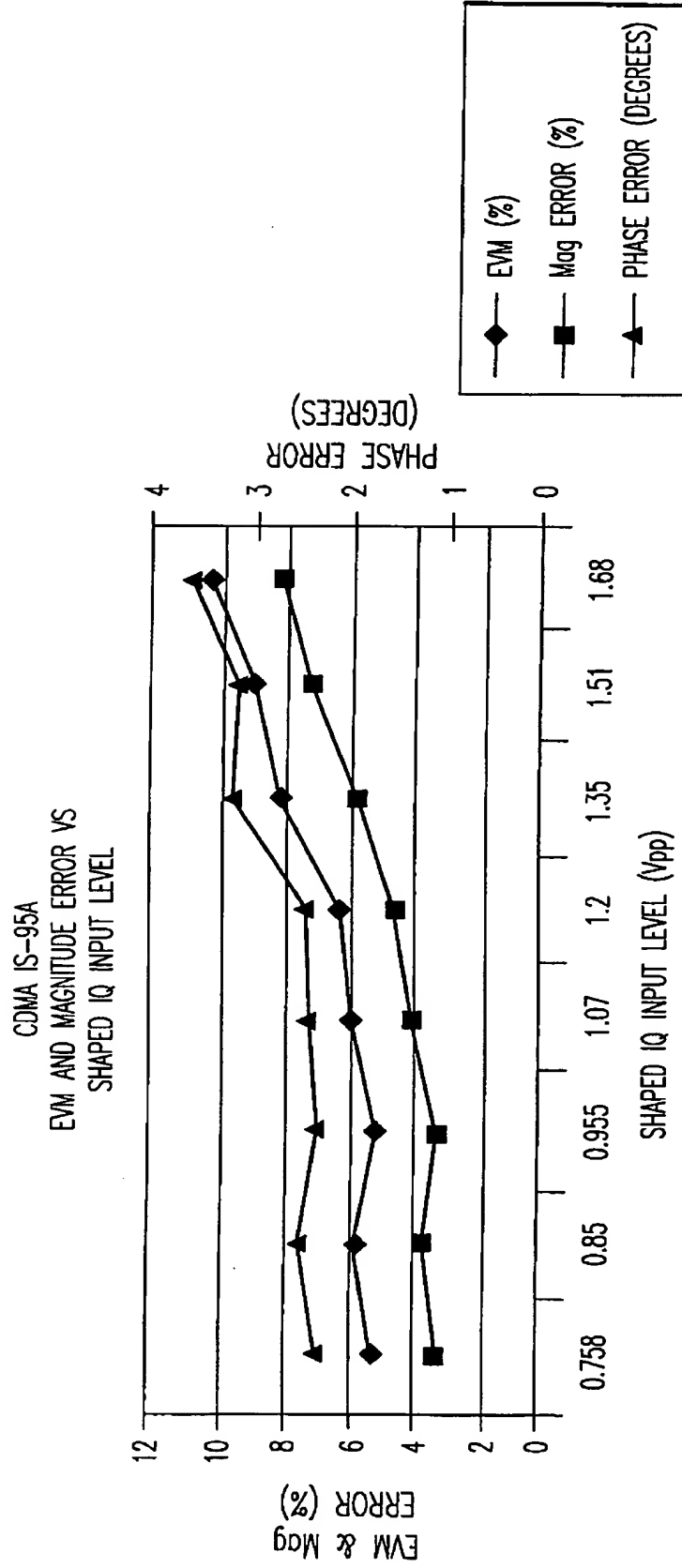


FIG.60E

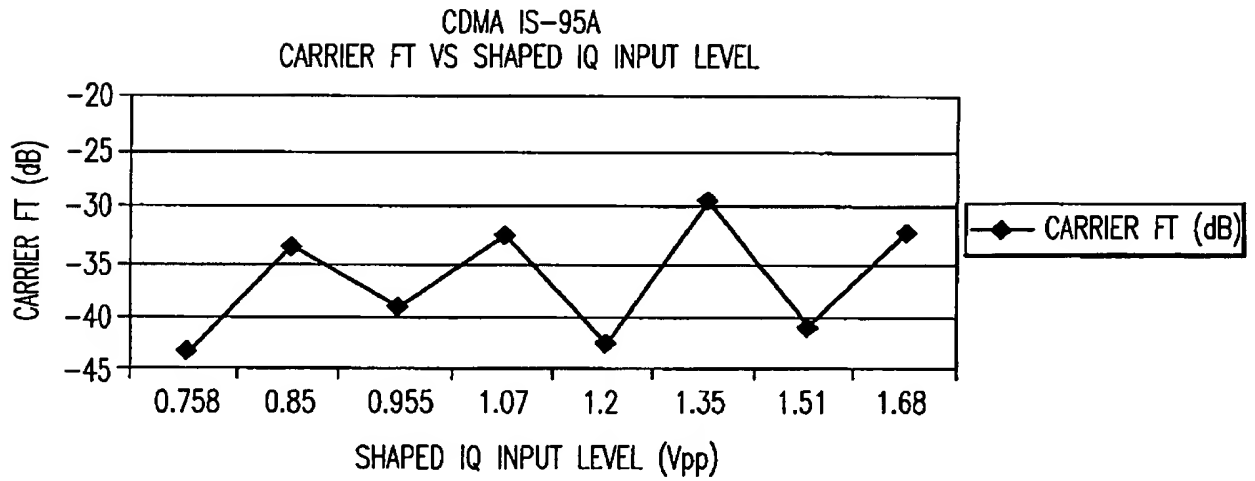


FIG.60F

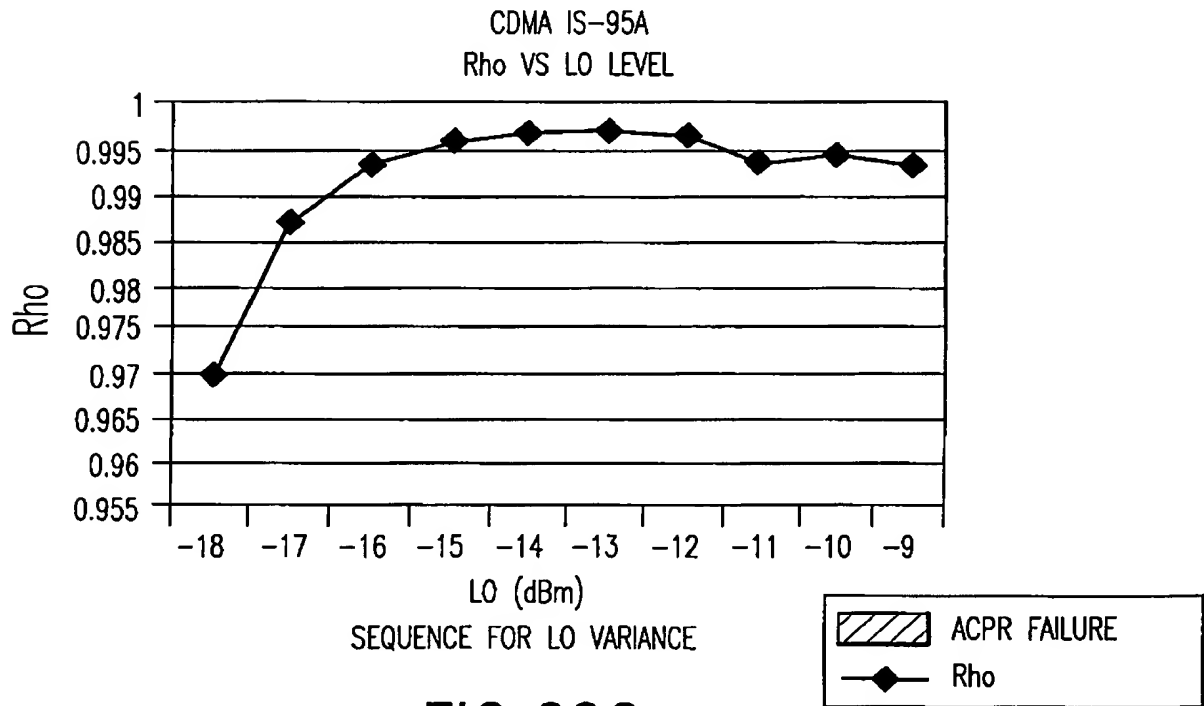


FIG.60G

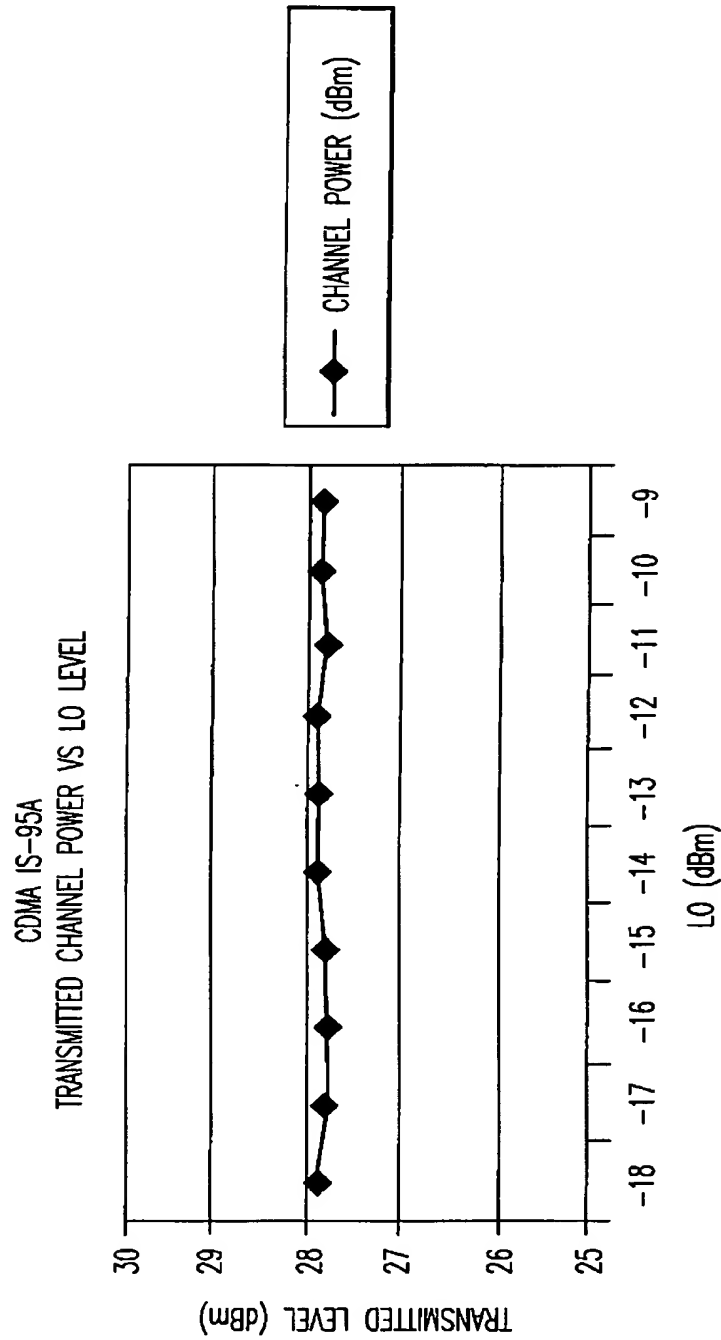


FIG. 60H

CDMA IS-95A  
 ACPR vs LO LEVEL

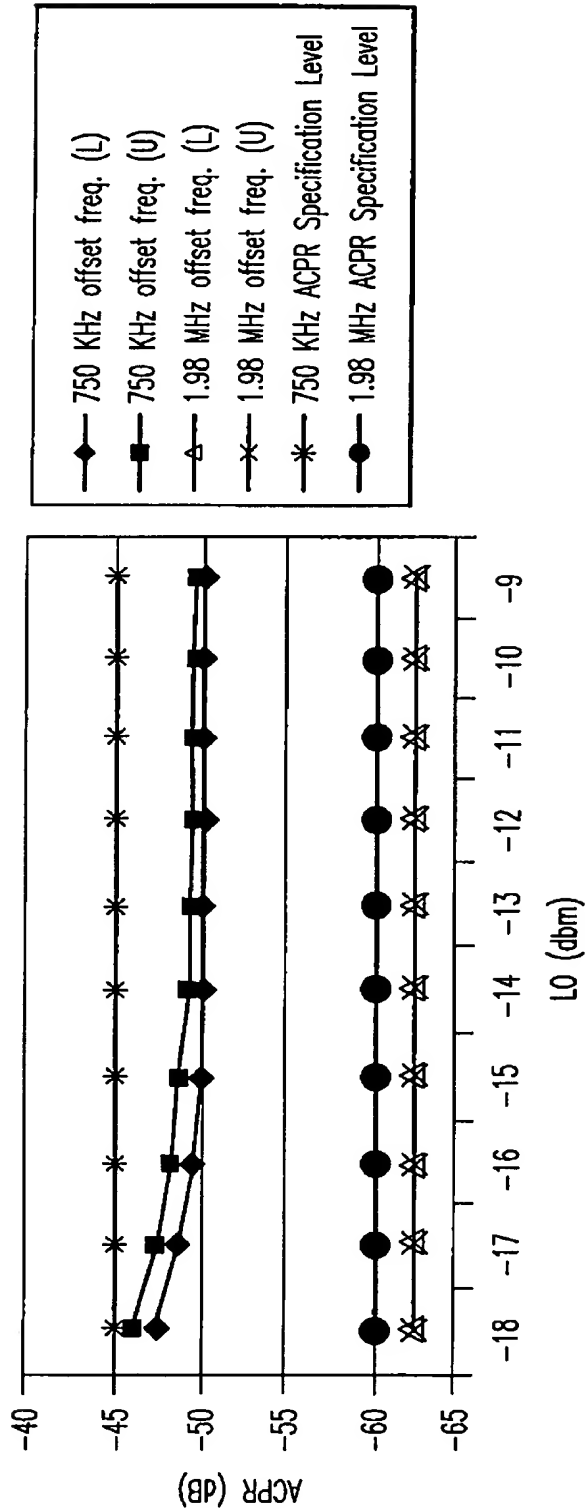
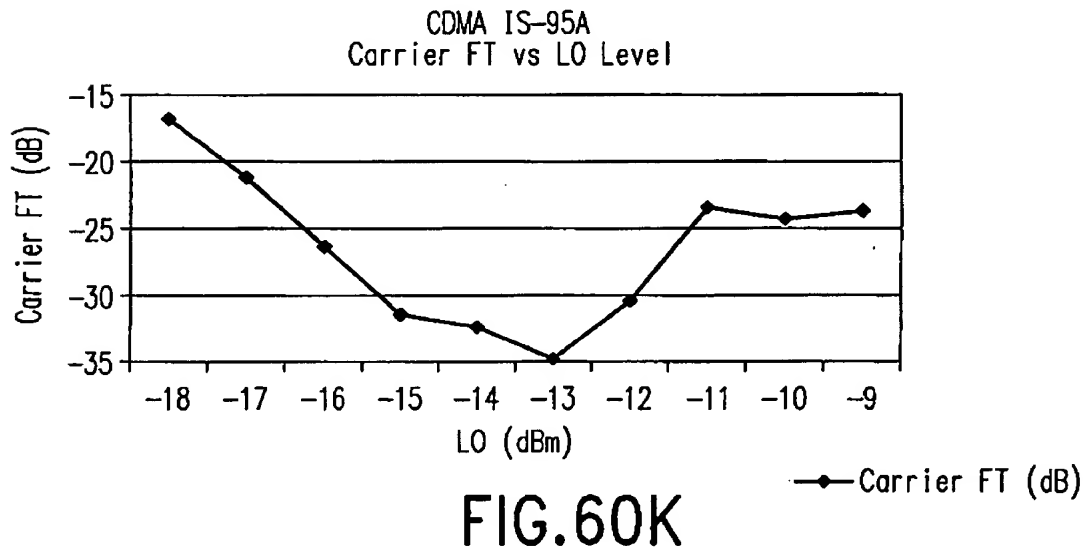
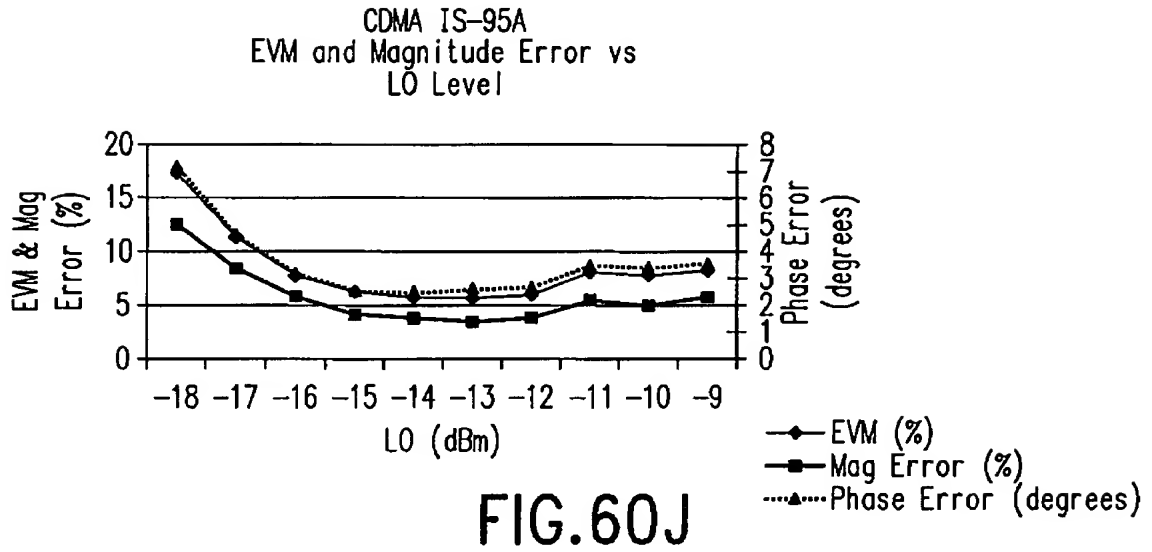


FIG. 60I





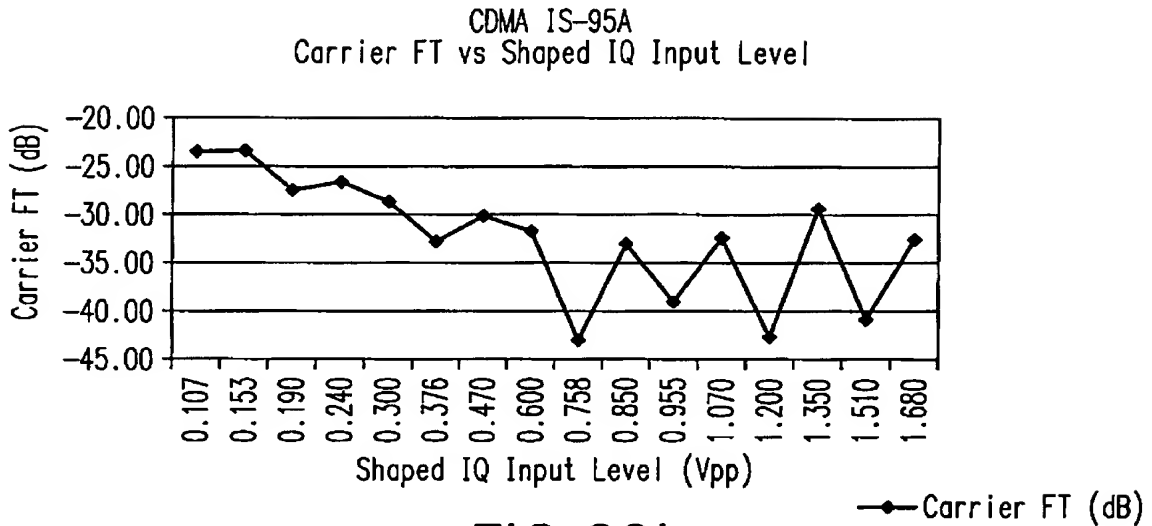
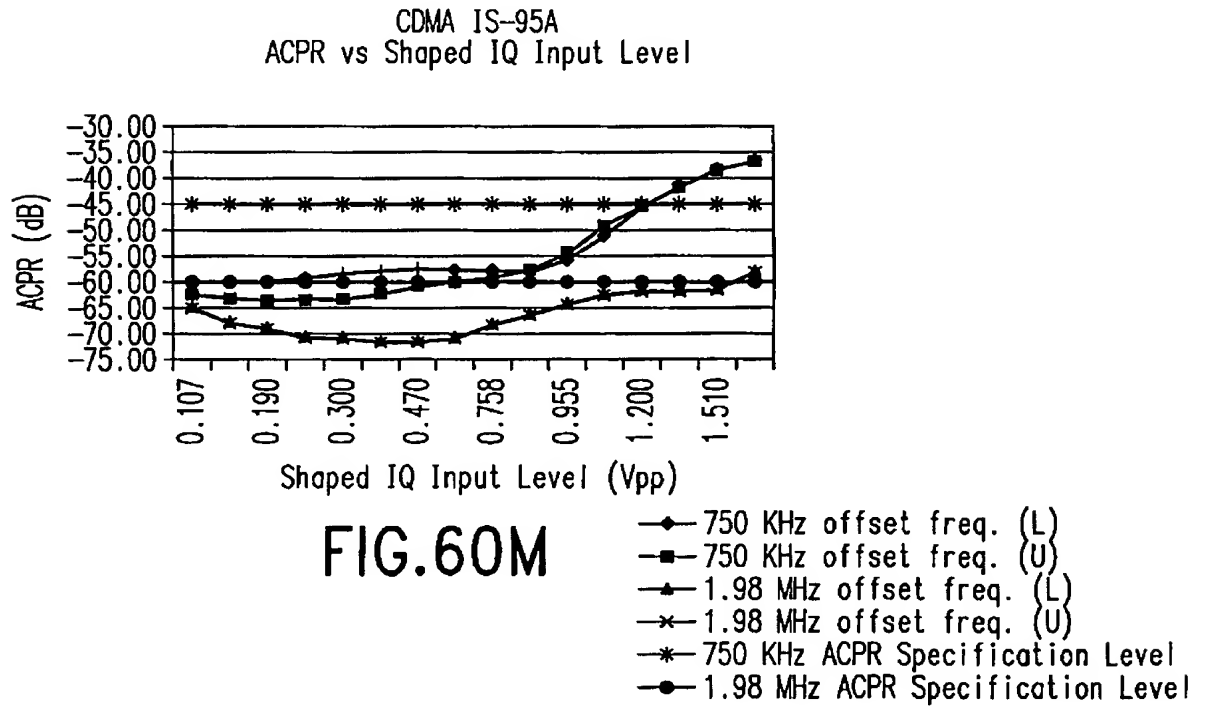


FIG.60L



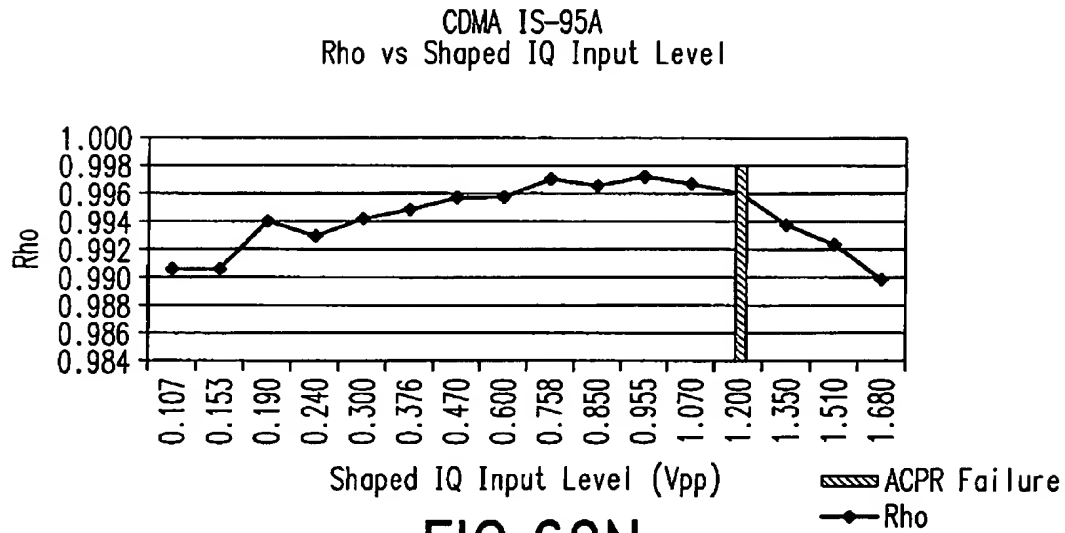


FIG.60N

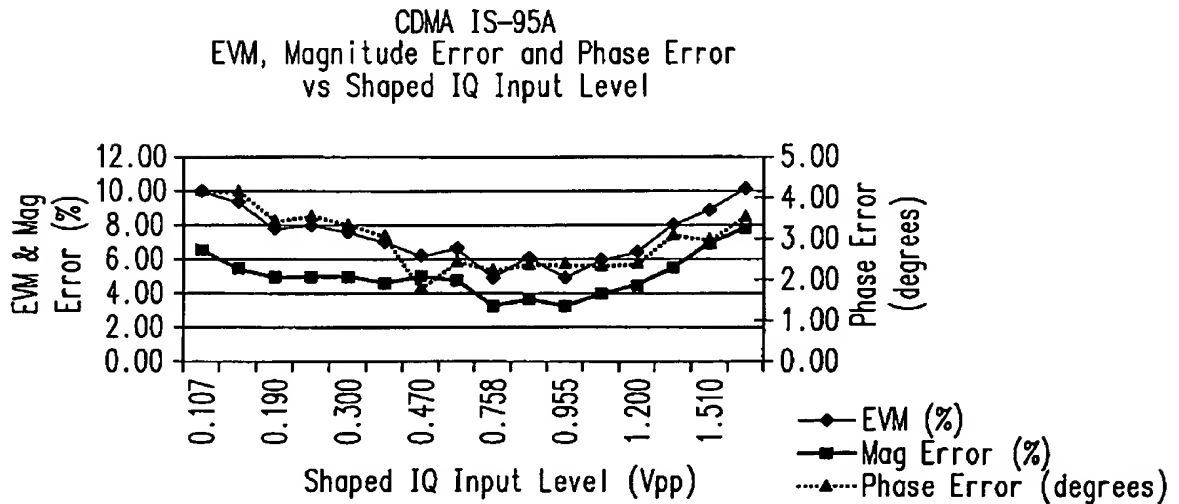


FIG.600

Sequence For IQ Input Level Variance  
 CDMA IS-95A Mobile Transmitter@+3.3V  
 Rho vs Shaped IQ Input Level

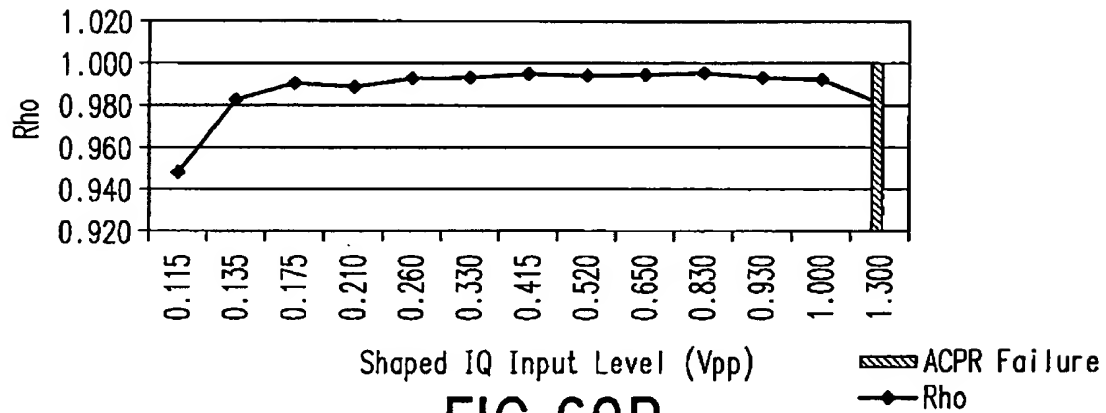


FIG.60P

CDMA IS-95A Mobile Transmitter@+3.3V  
 Transmitted Channel Power vs Shaped IQ Input Level

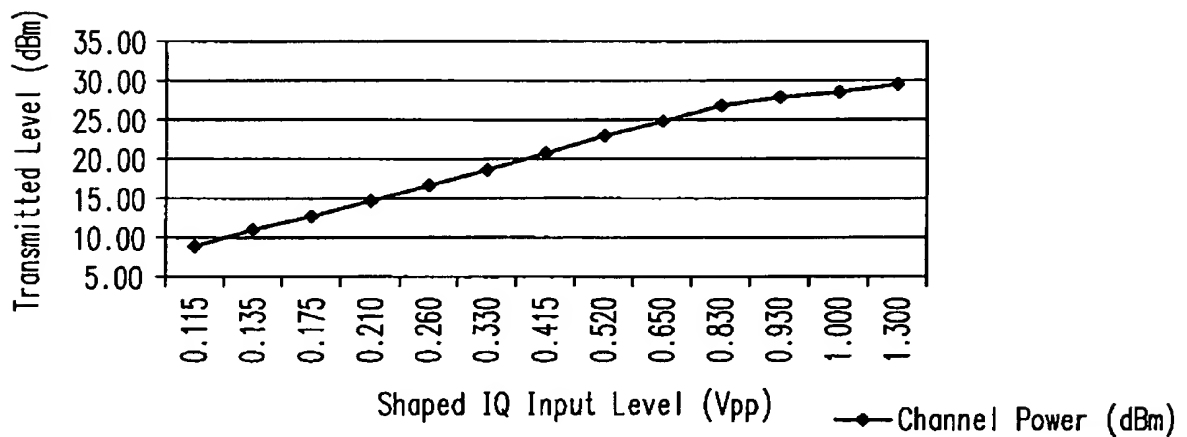


FIG.60Q

CDMA IS-95A Mobile Transmitter@+3.3V  
 ACPR vs Shaped IQ Input Level

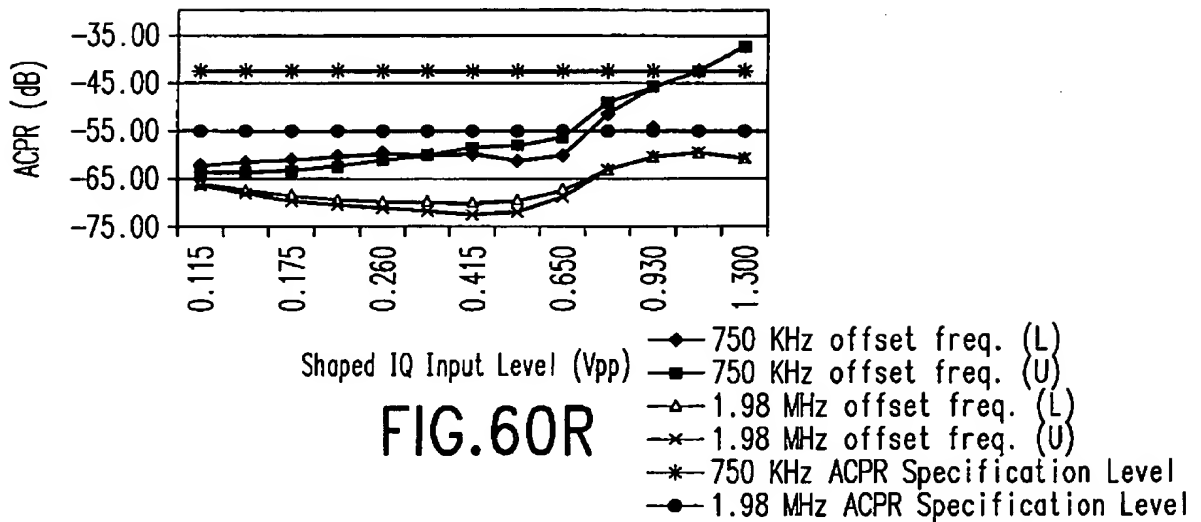


FIG.60R

CDMA IS-95A Mobile Transmitter@+3.3V  
 EVM, Magnitude Error and Phase Error  
 vs Shaped IQ Input Level

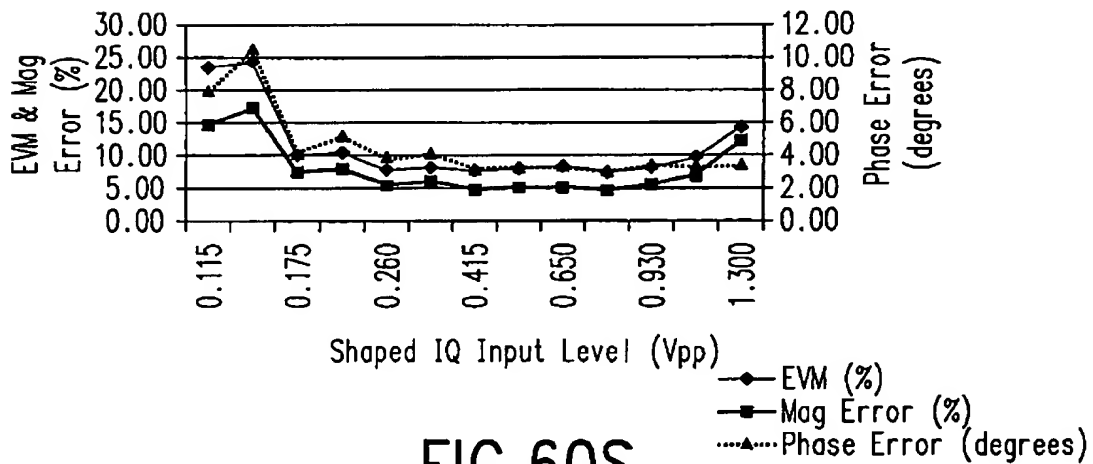


FIG.60S

CDMA IS-95A Mobile Transmitter@+3.3V  
 Carrier FT vs Shaped IQ Input Level

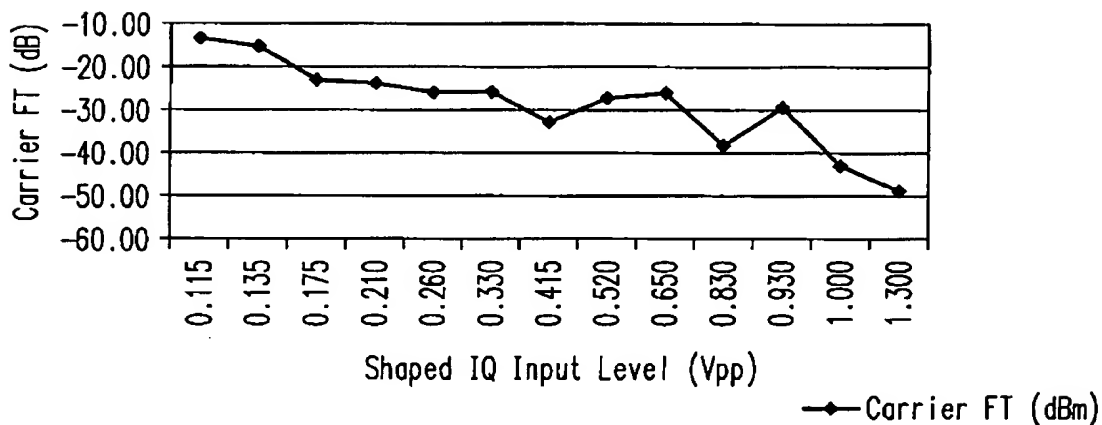


FIG.60T

Sequence For LO Variance  
 CDMA IS-95A Mobile Transmitter@+3.3V  
 Rho vs LO Level

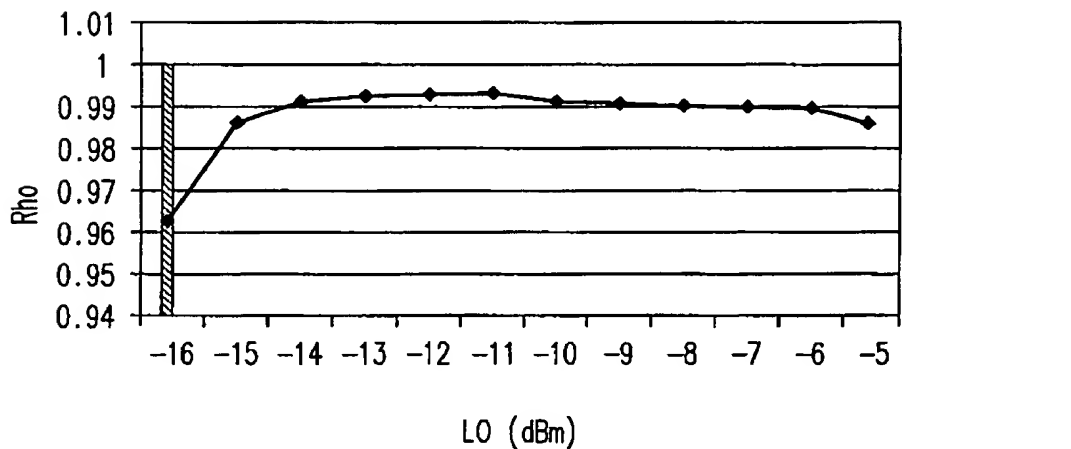


FIG.60U

CDMA IS-95A Mobile Transmitter@+3.3V  
 Transmitted Channel Power vs LO Level

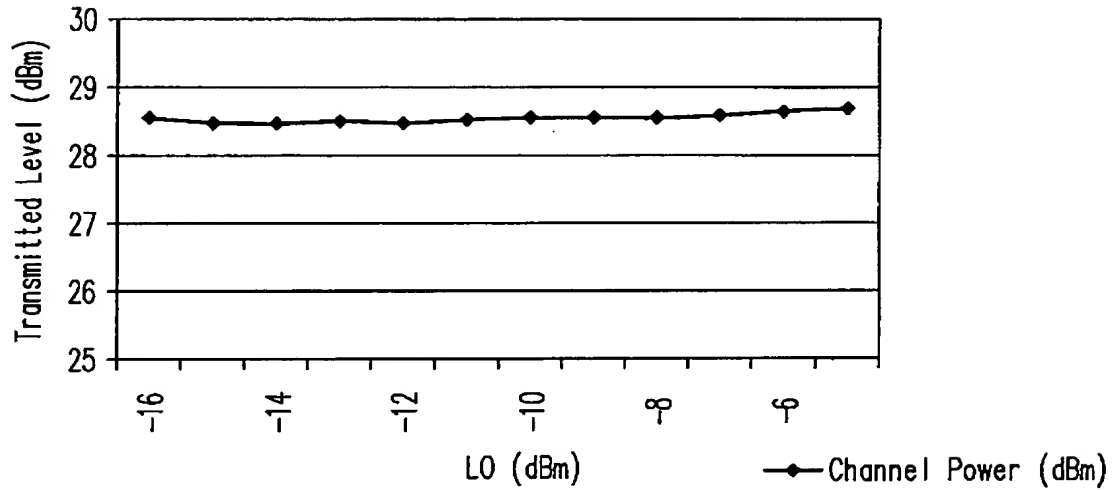


FIG.60V

CDMA IS-95A Mobile Transmitter@+3.3V  
 ACPR vs LO Level

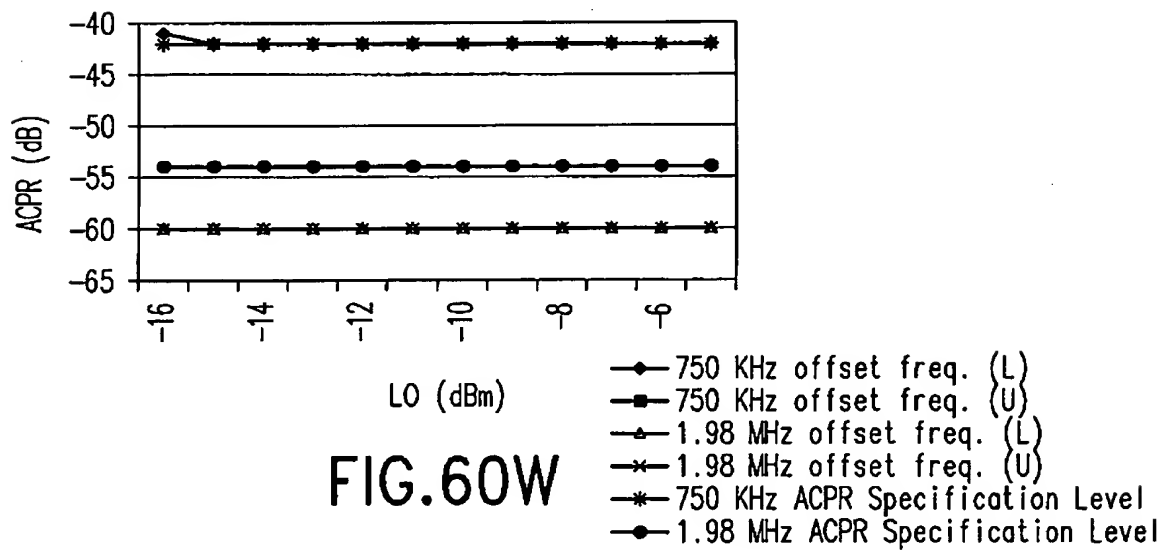
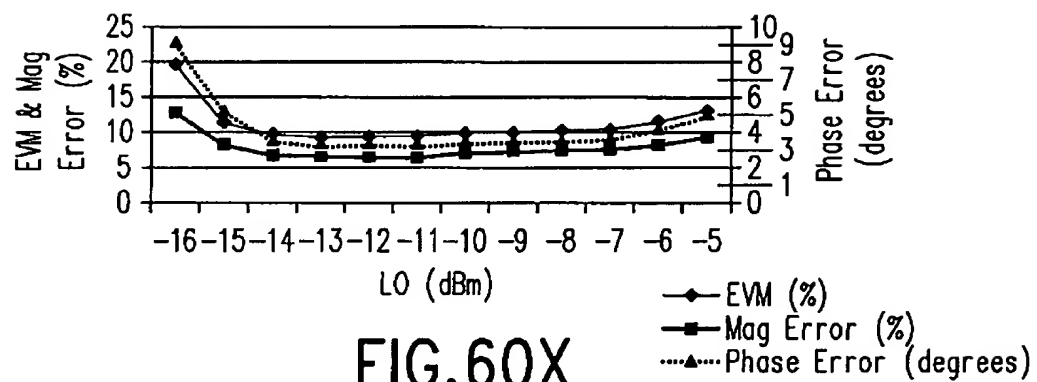
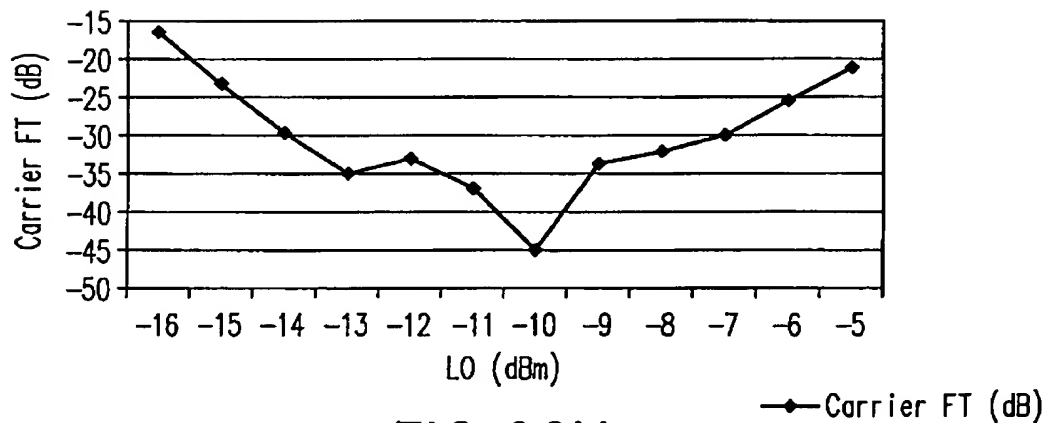


FIG.60W

CDMA IS-95A Mobile Transmitter@+3.3V  
 EVM and Magnitude Error vs  
 LO Level



CDMA IS-95A Mobile Transmitter@+3.3V  
 Carrier FT vs LO Level





QUANTITY	DESCRIPTION	VOLTAGE	TOTAL CURRENT	POWER
2	D2D CORES	3.3	4mA	13.2mW
2	BASEBAND INTERFACE CIRCUITS WITH/BW LIMIT	3.3	6mA	21.8mW
1	CLOCK CIRCUIT	3.3	5mA	20.0mW
			SUB TOTAL	54.0mW

FIG.60Z

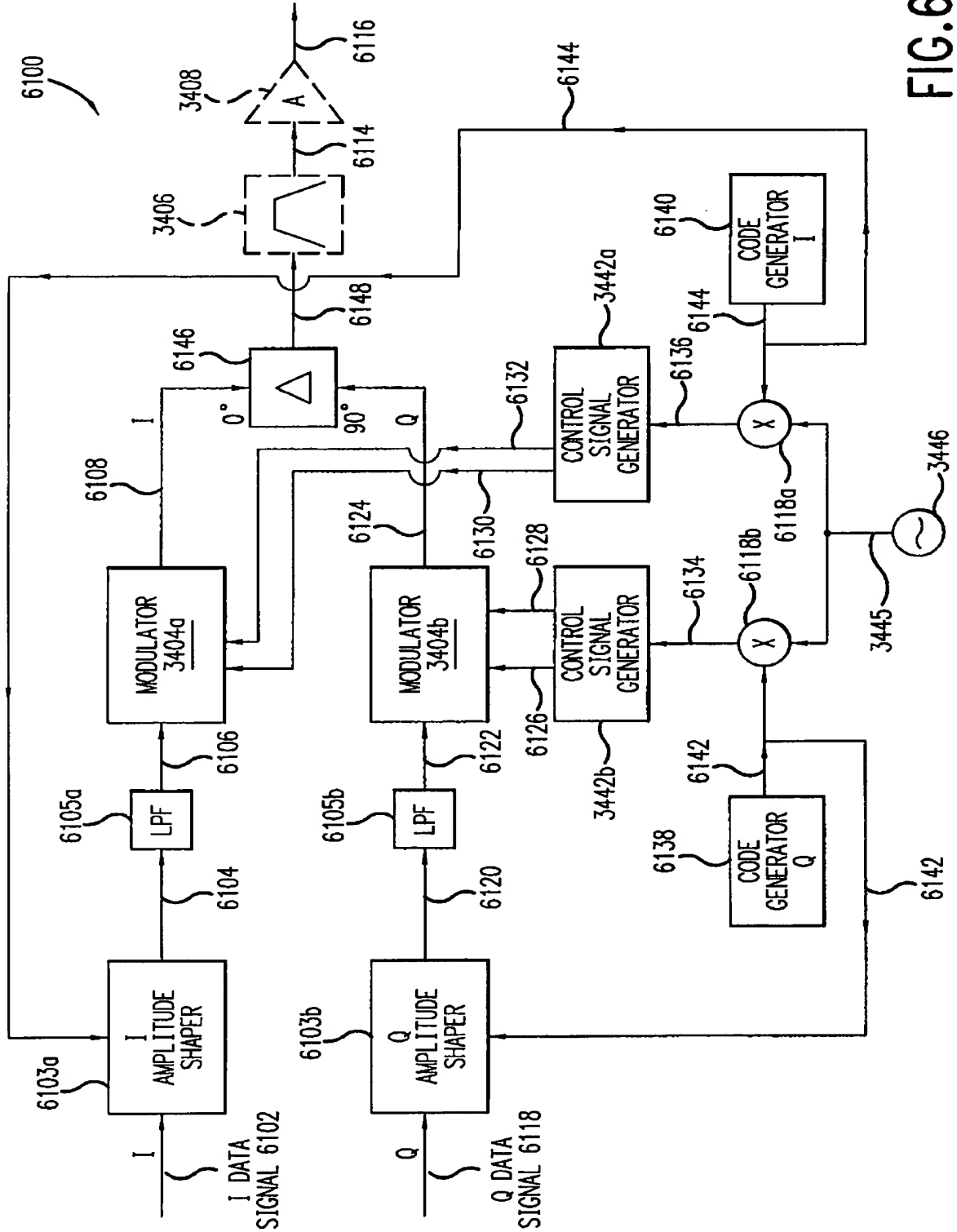


FIG. 61A

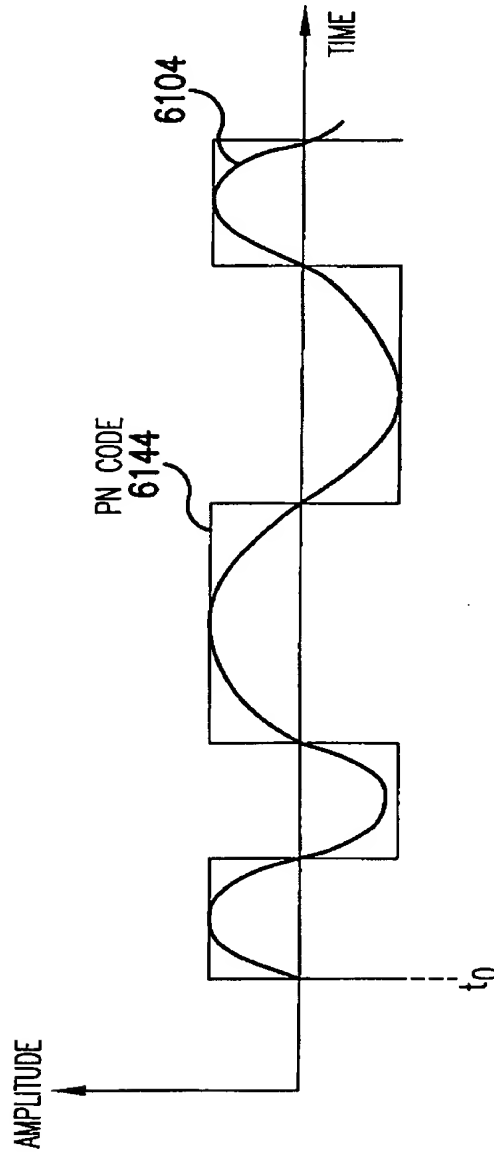


FIG. 61B

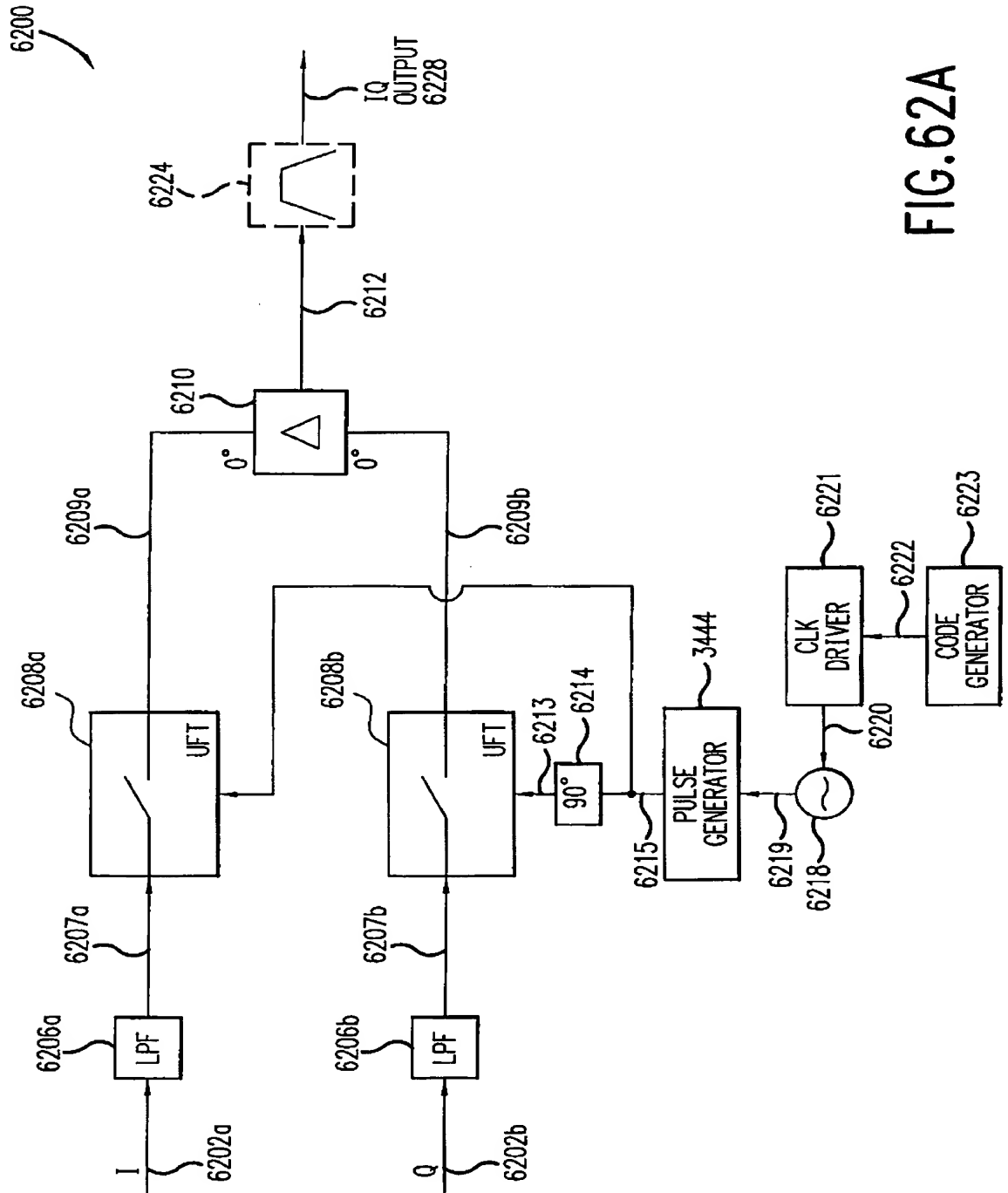


FIG. 62A

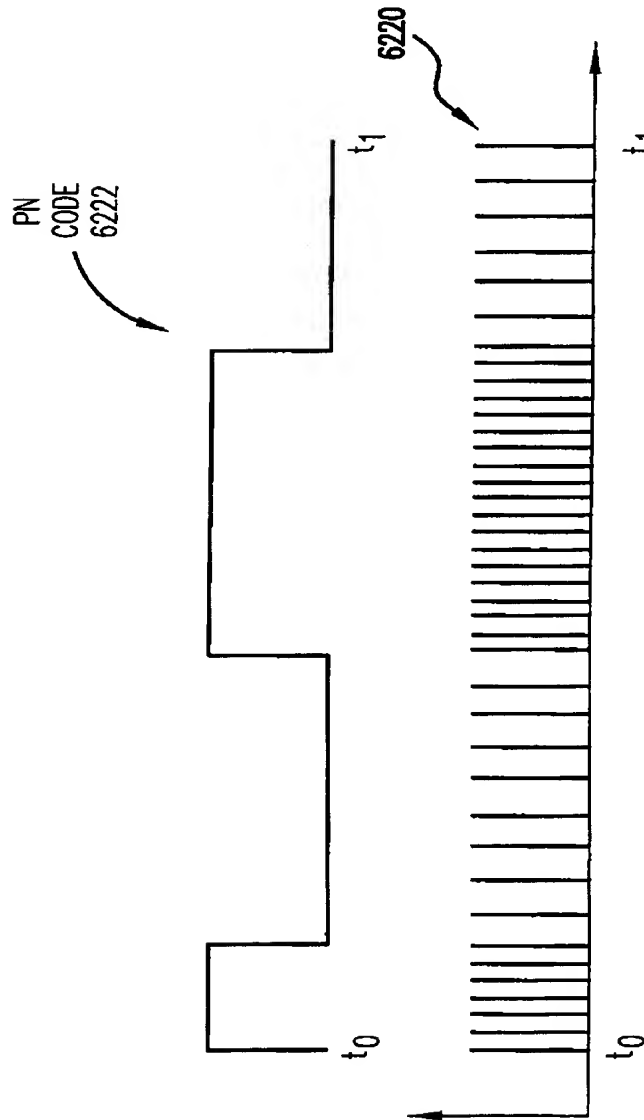


FIG. 62B

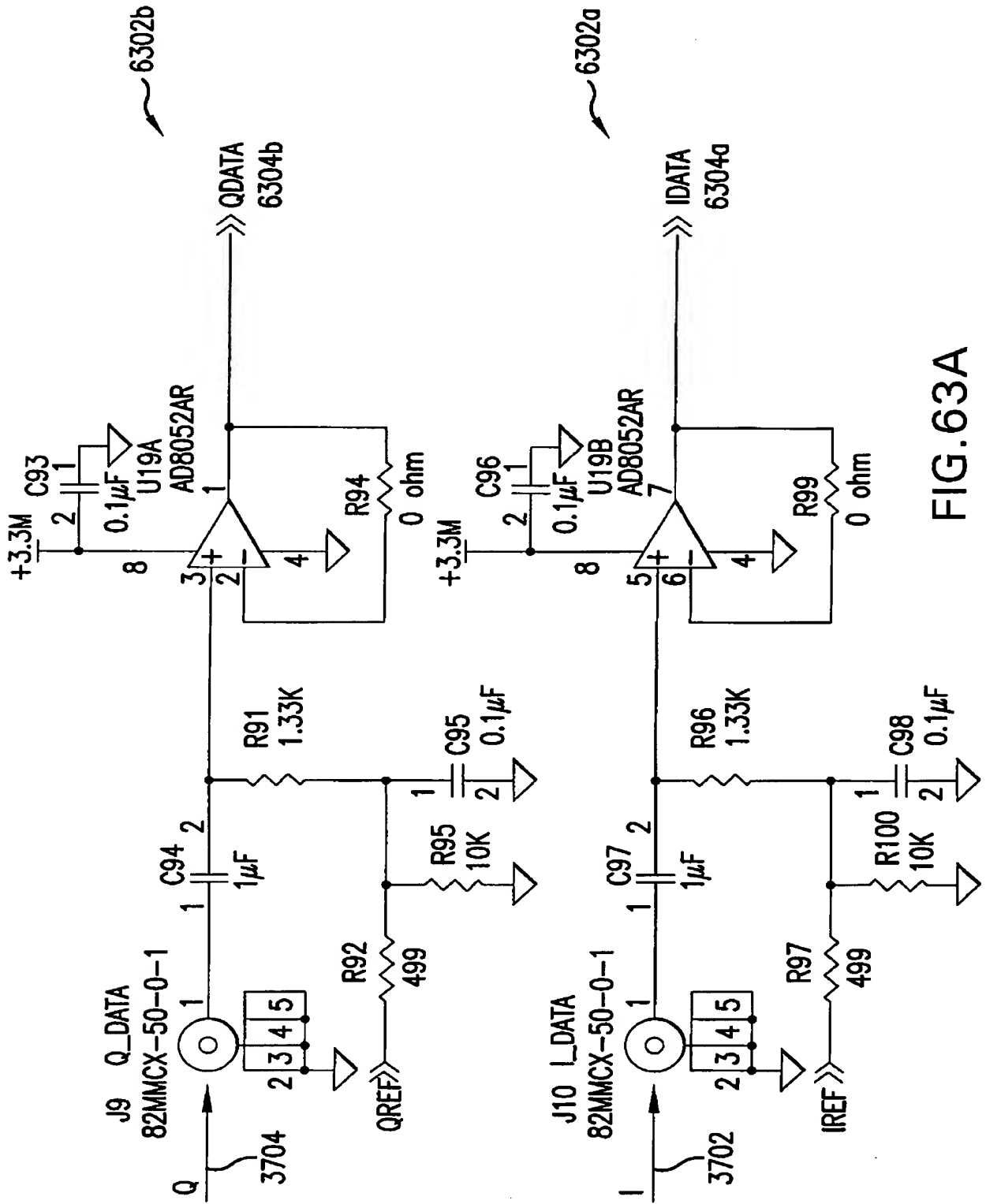
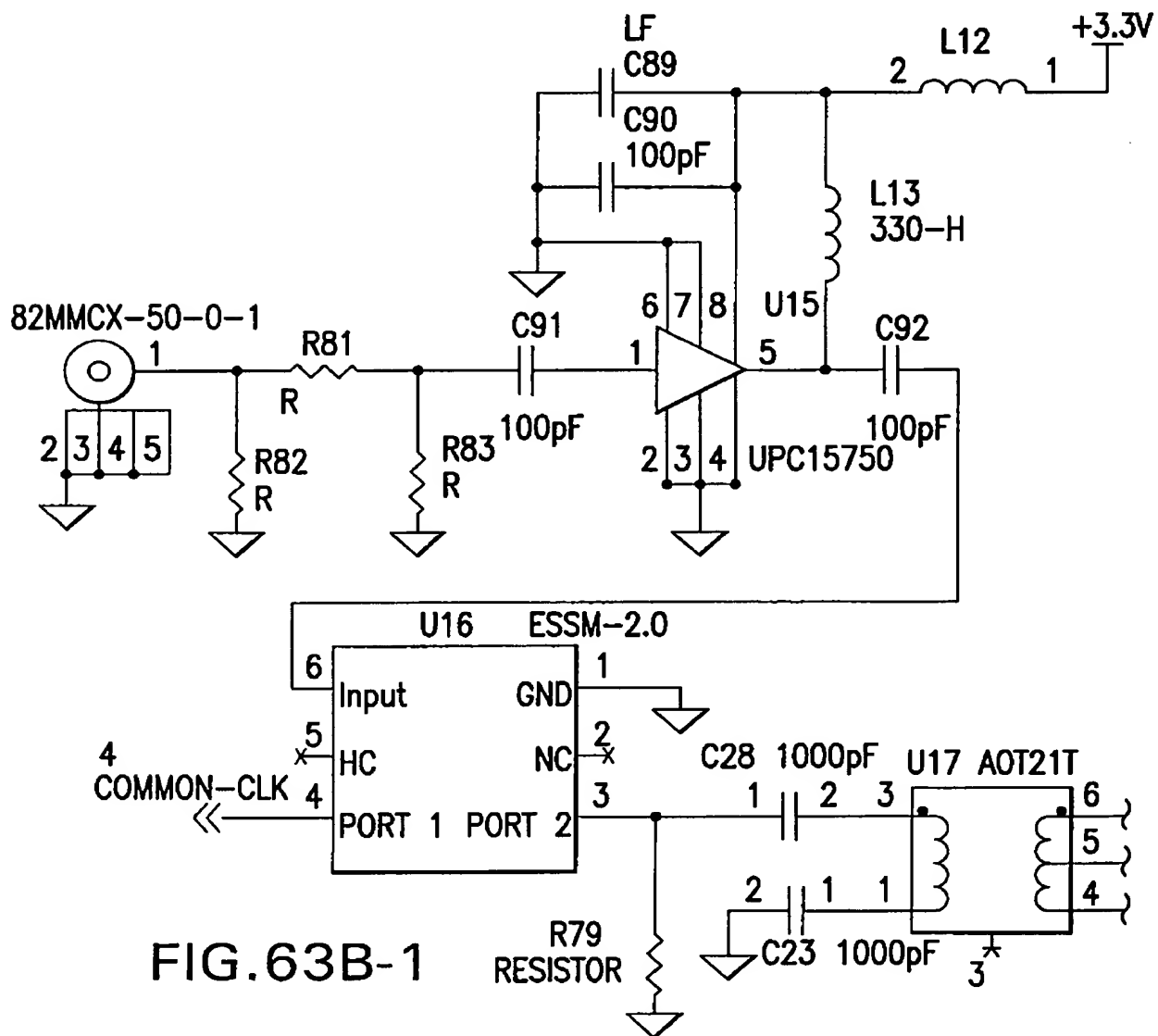
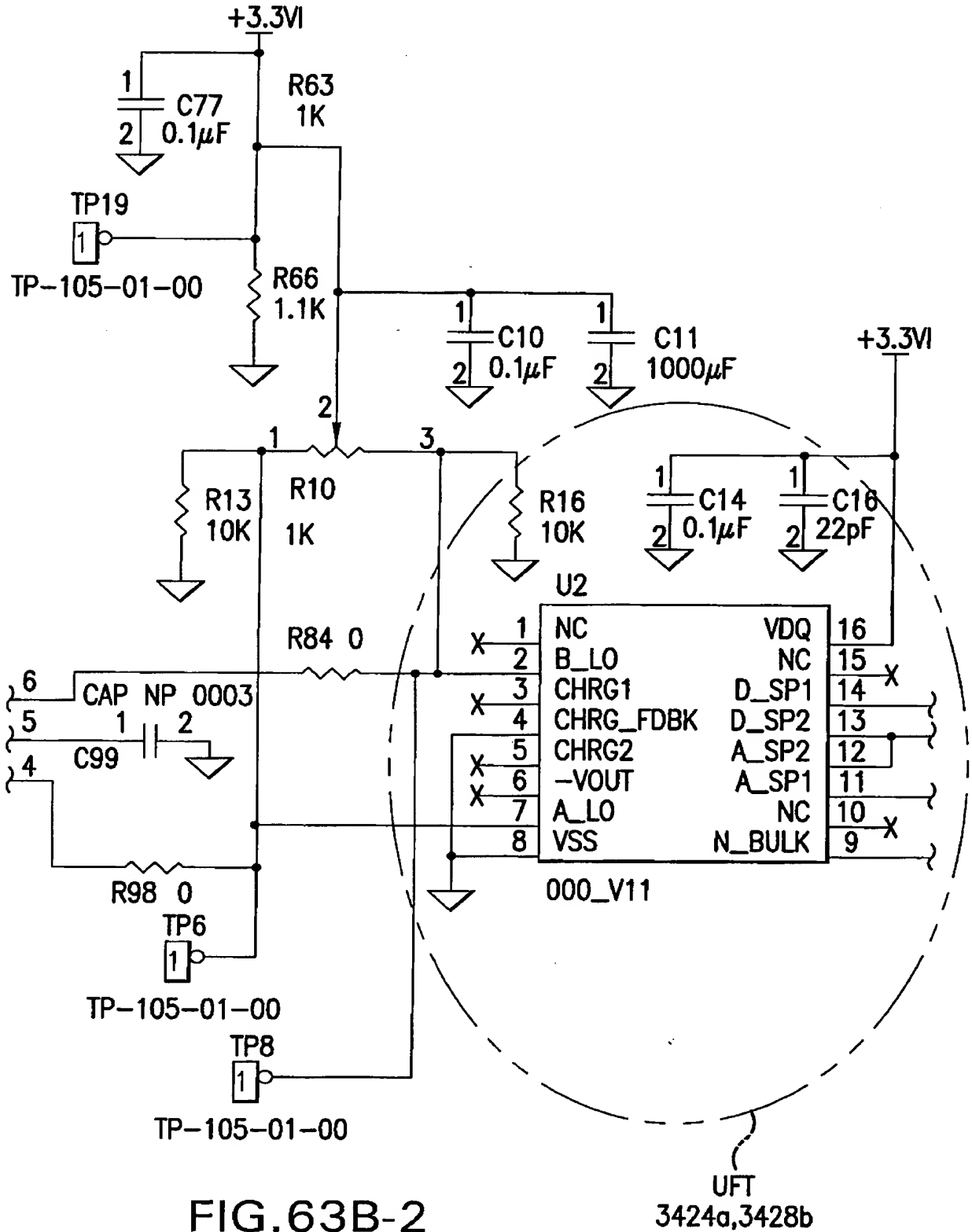


FIG. 63A



**FIG. 63B-1**





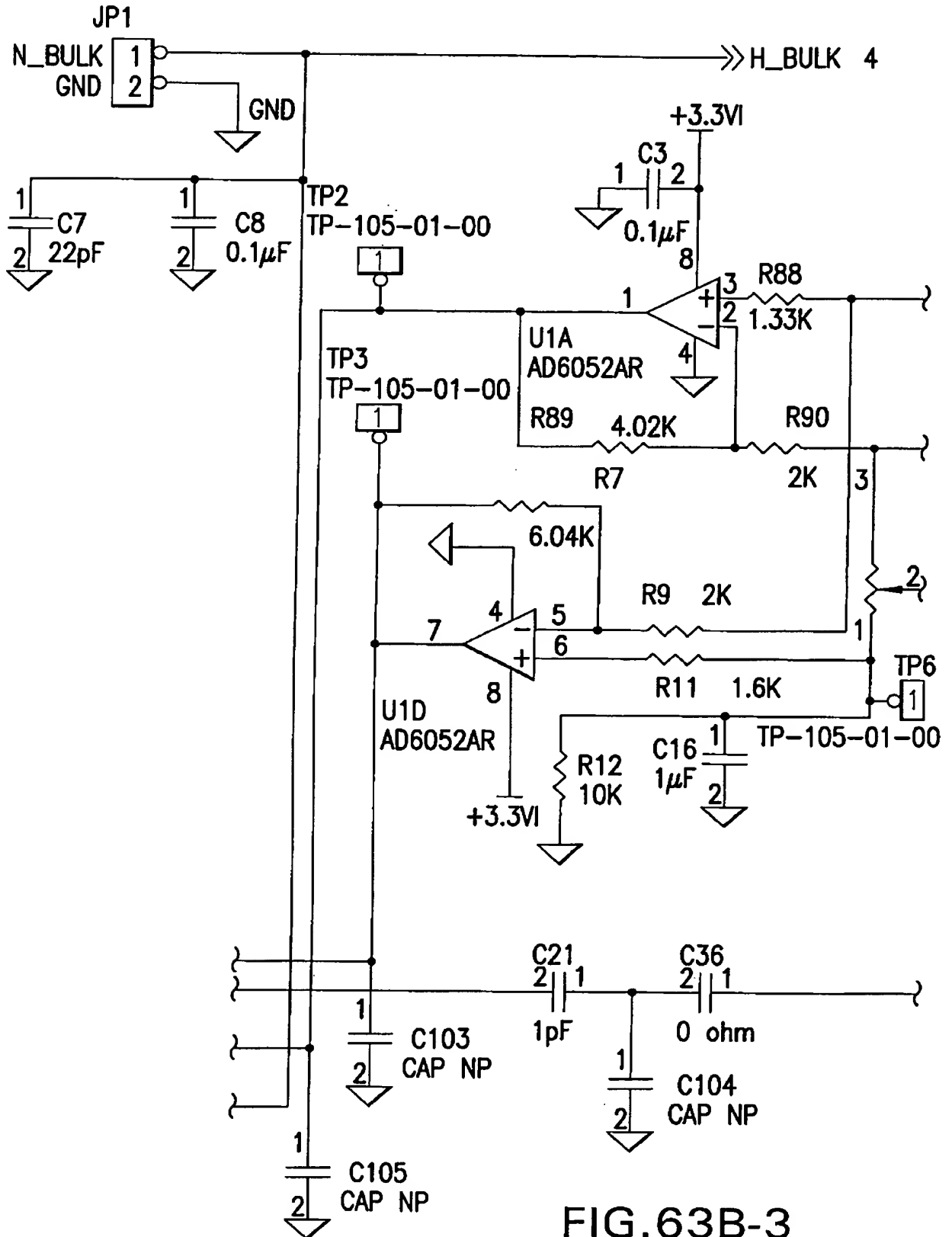


FIG. 63B-3

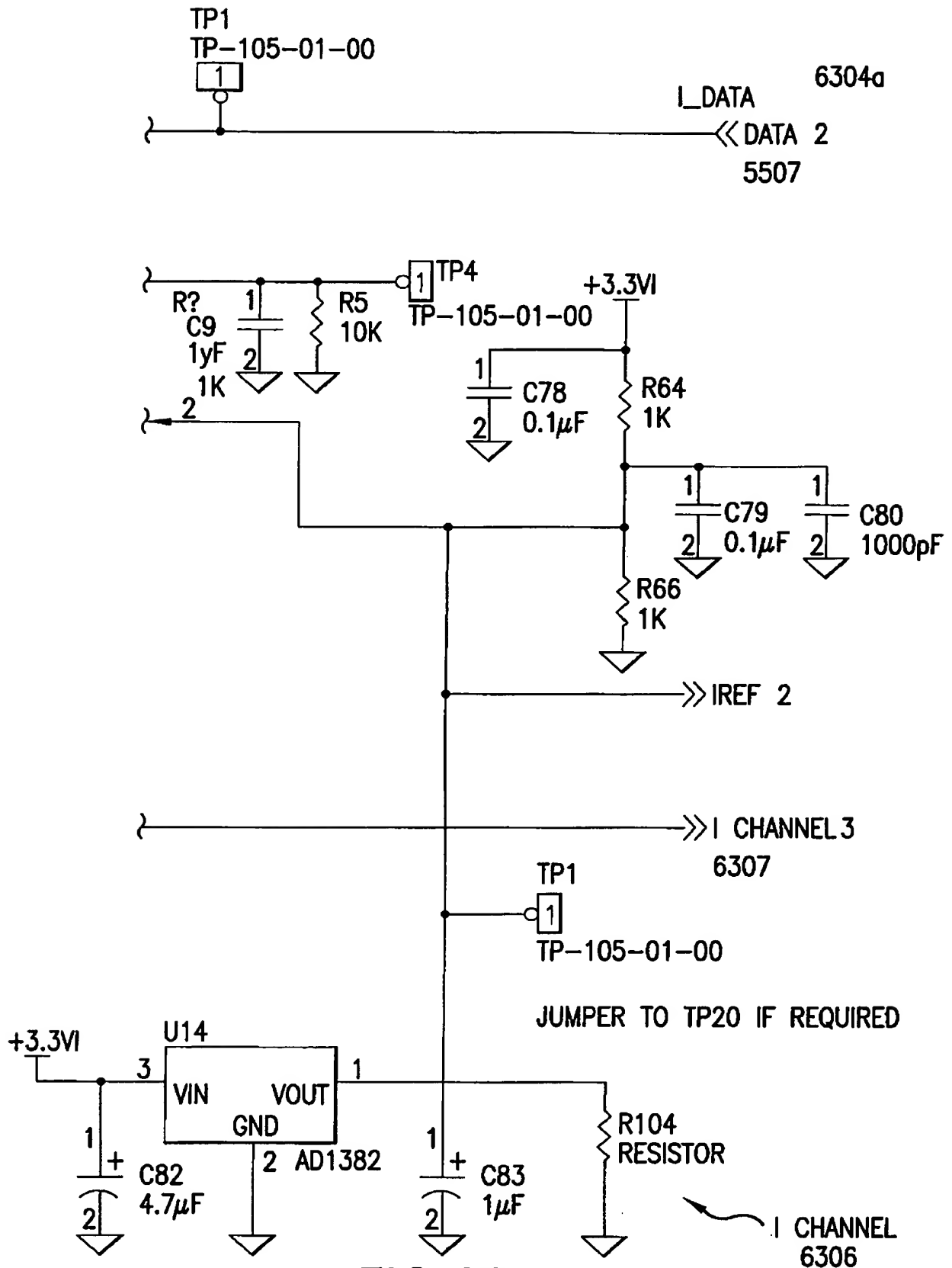
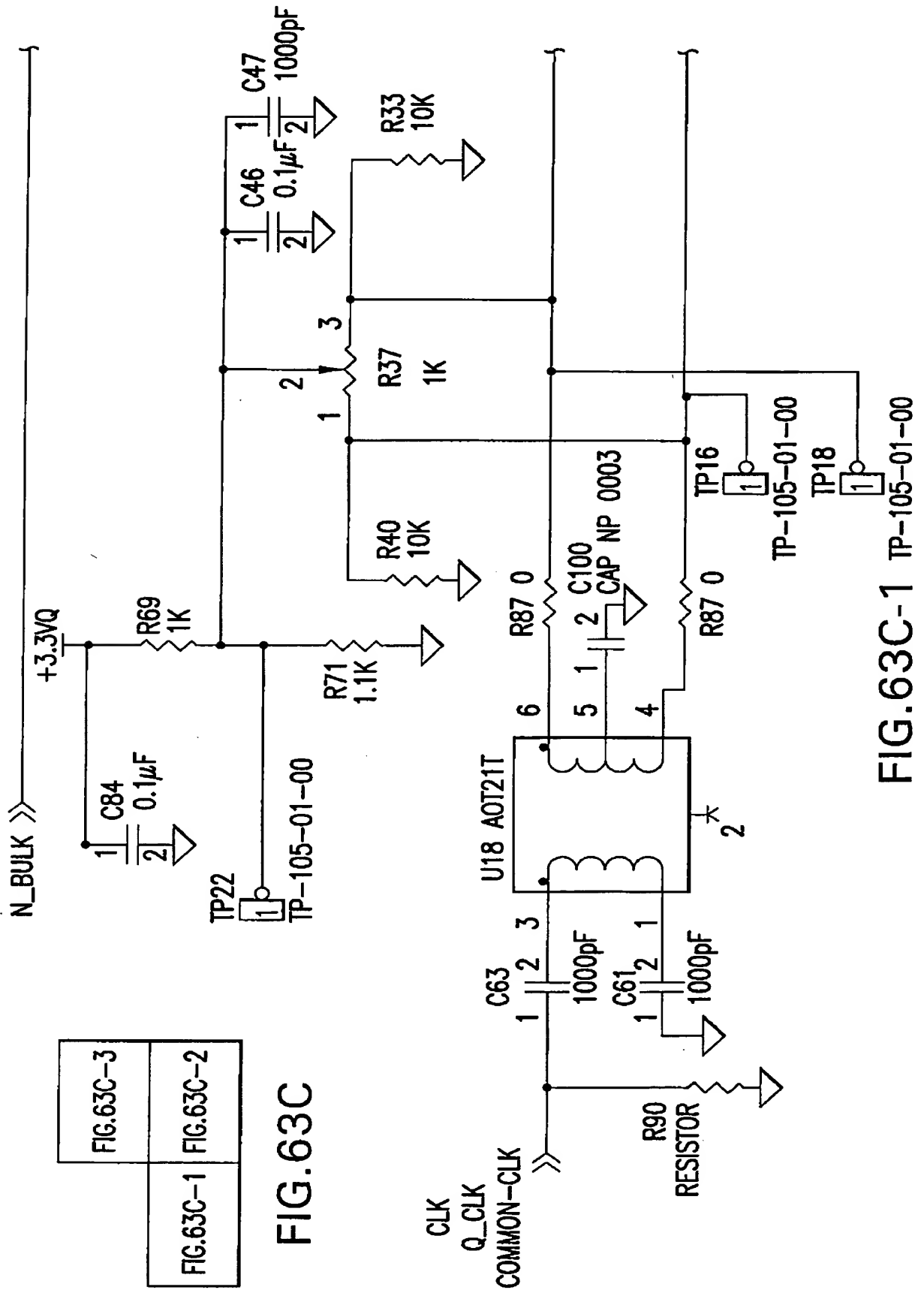


FIG. 63B-4





**FIG. 63C-2**

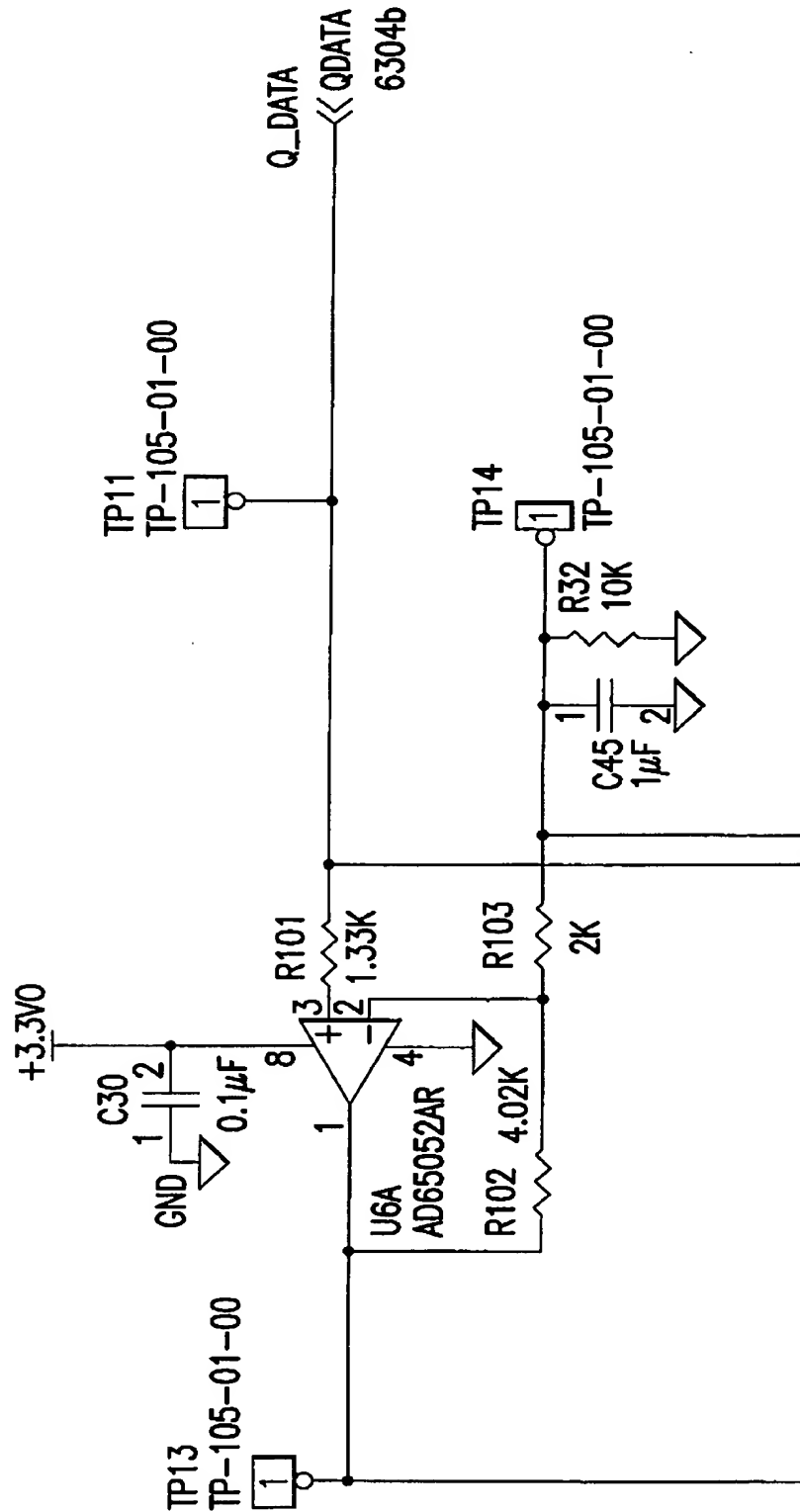


FIG.63C-3

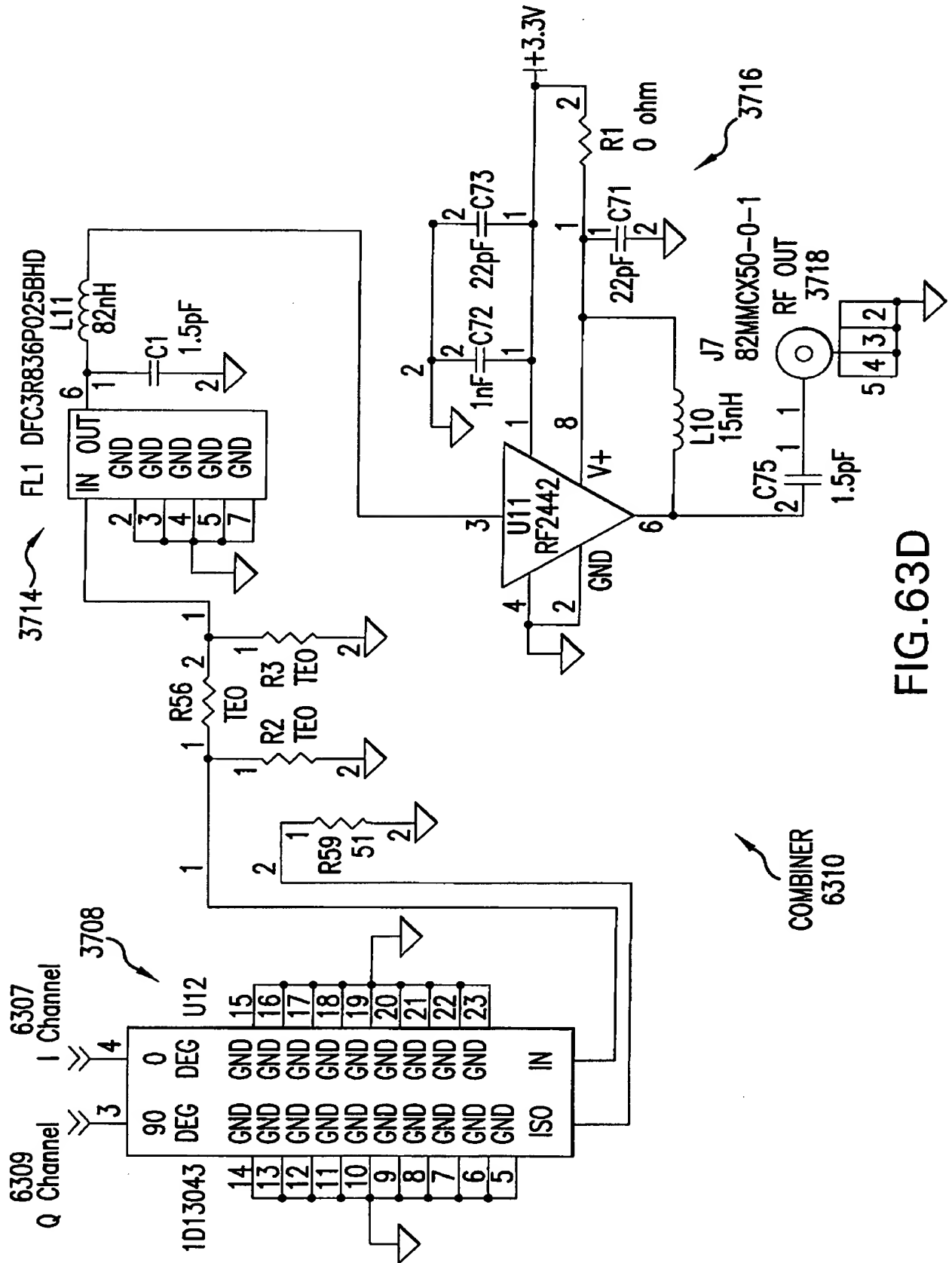
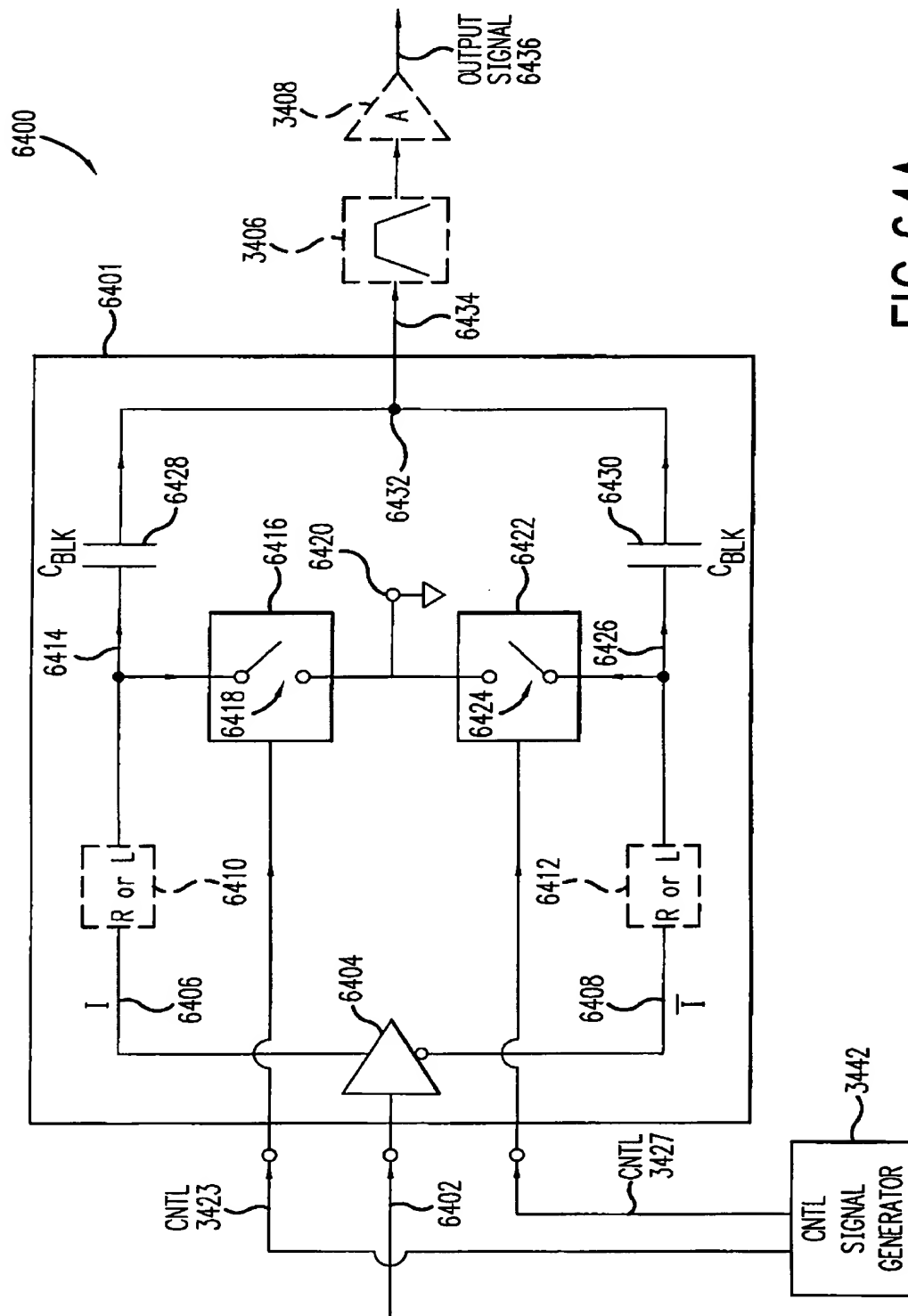


FIG. 63D



**FIG. 64A**

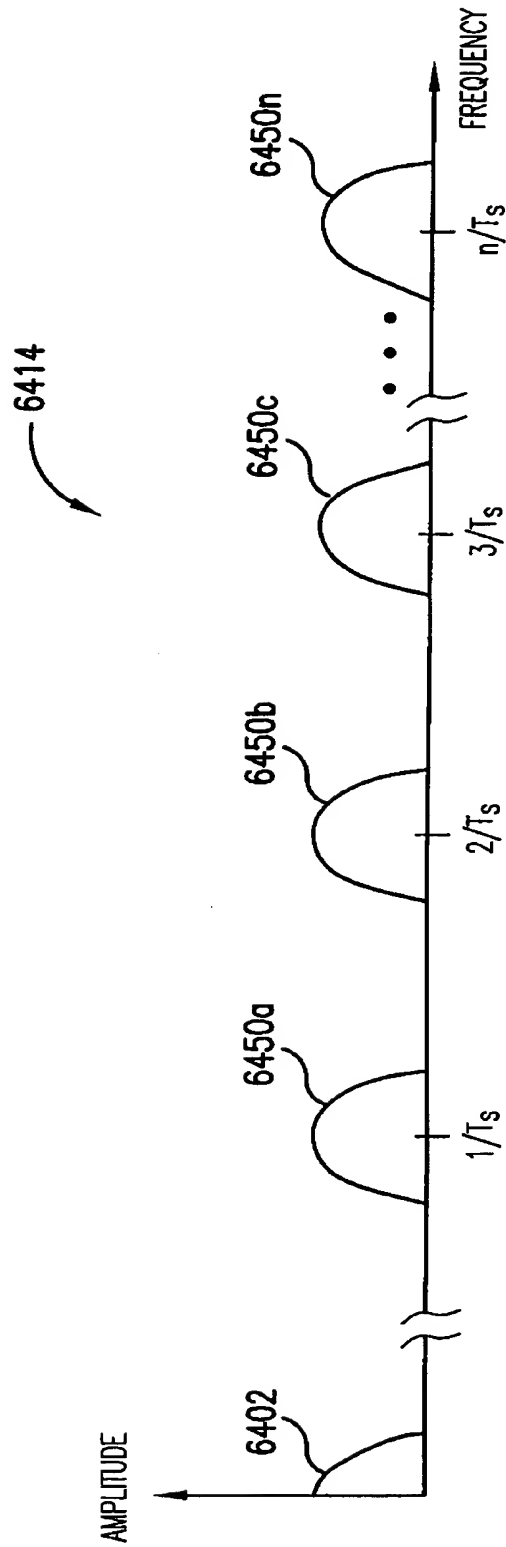


FIG. 64B



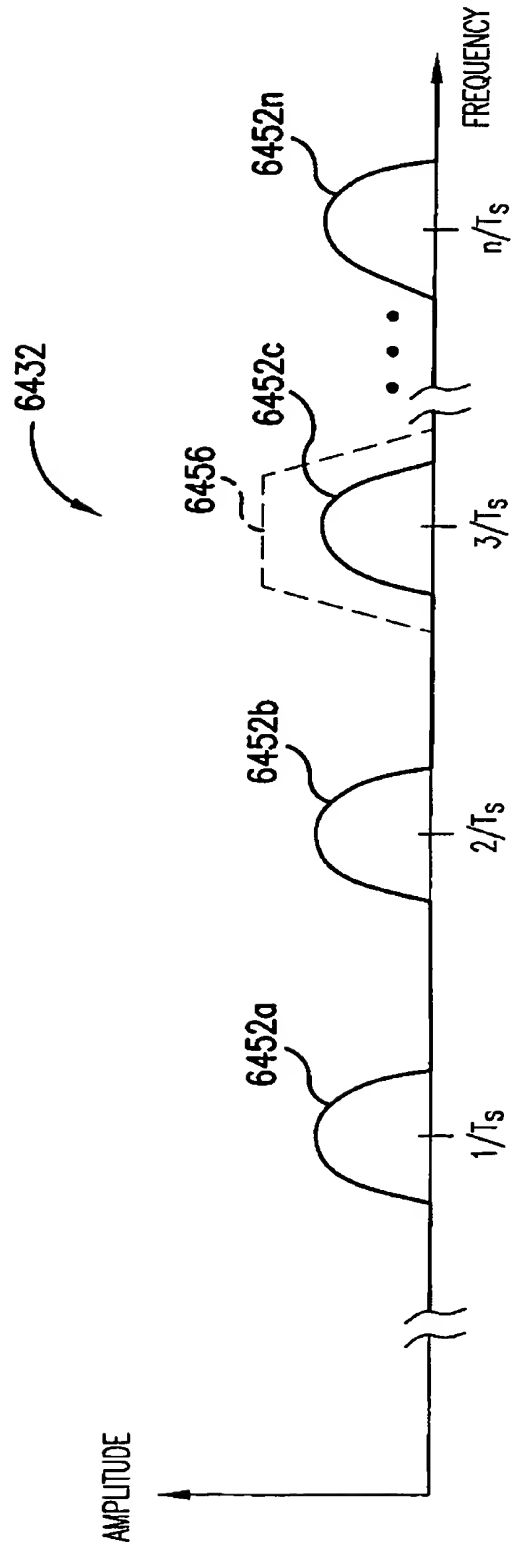


FIG. 64C

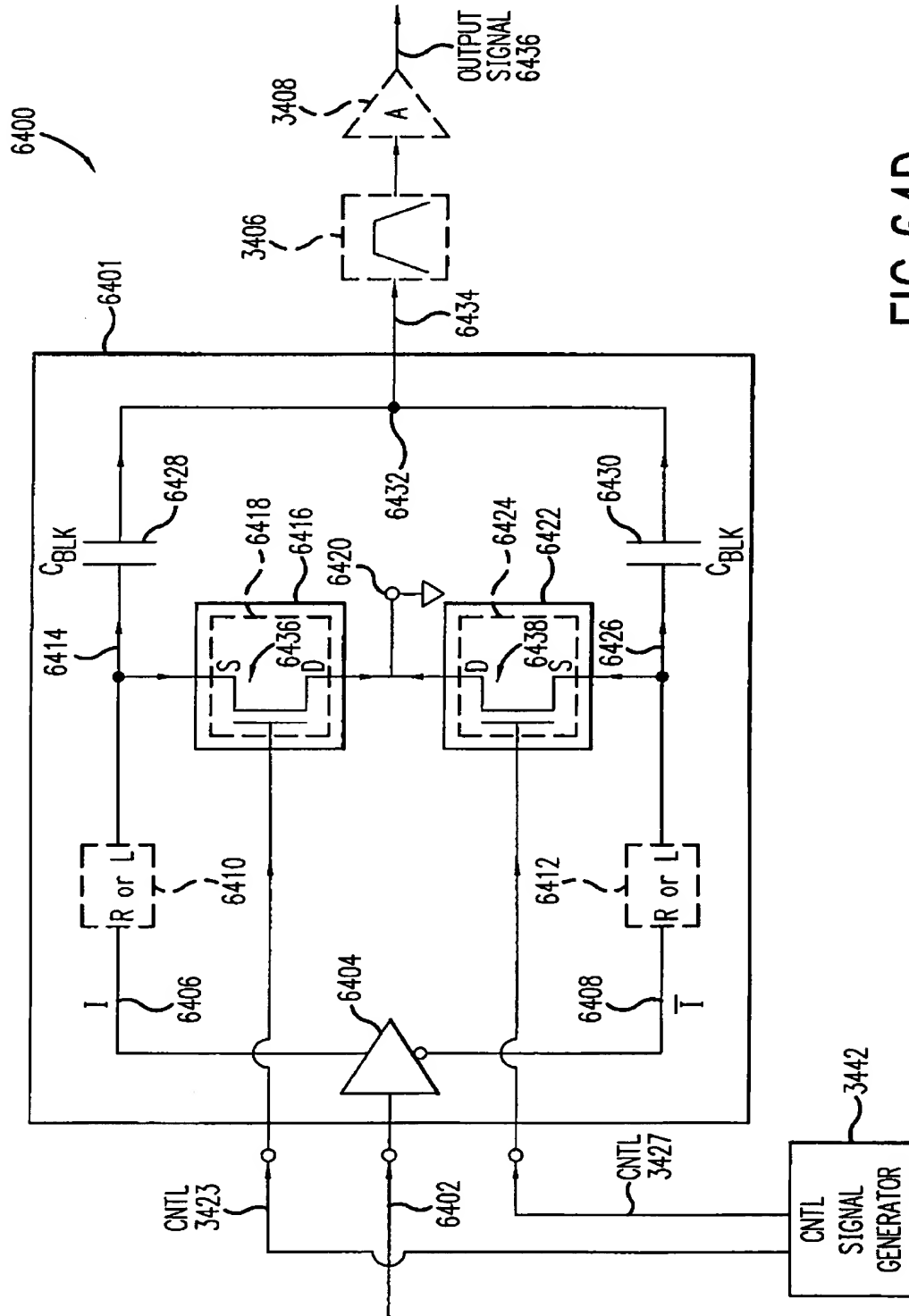


FIG. 64D

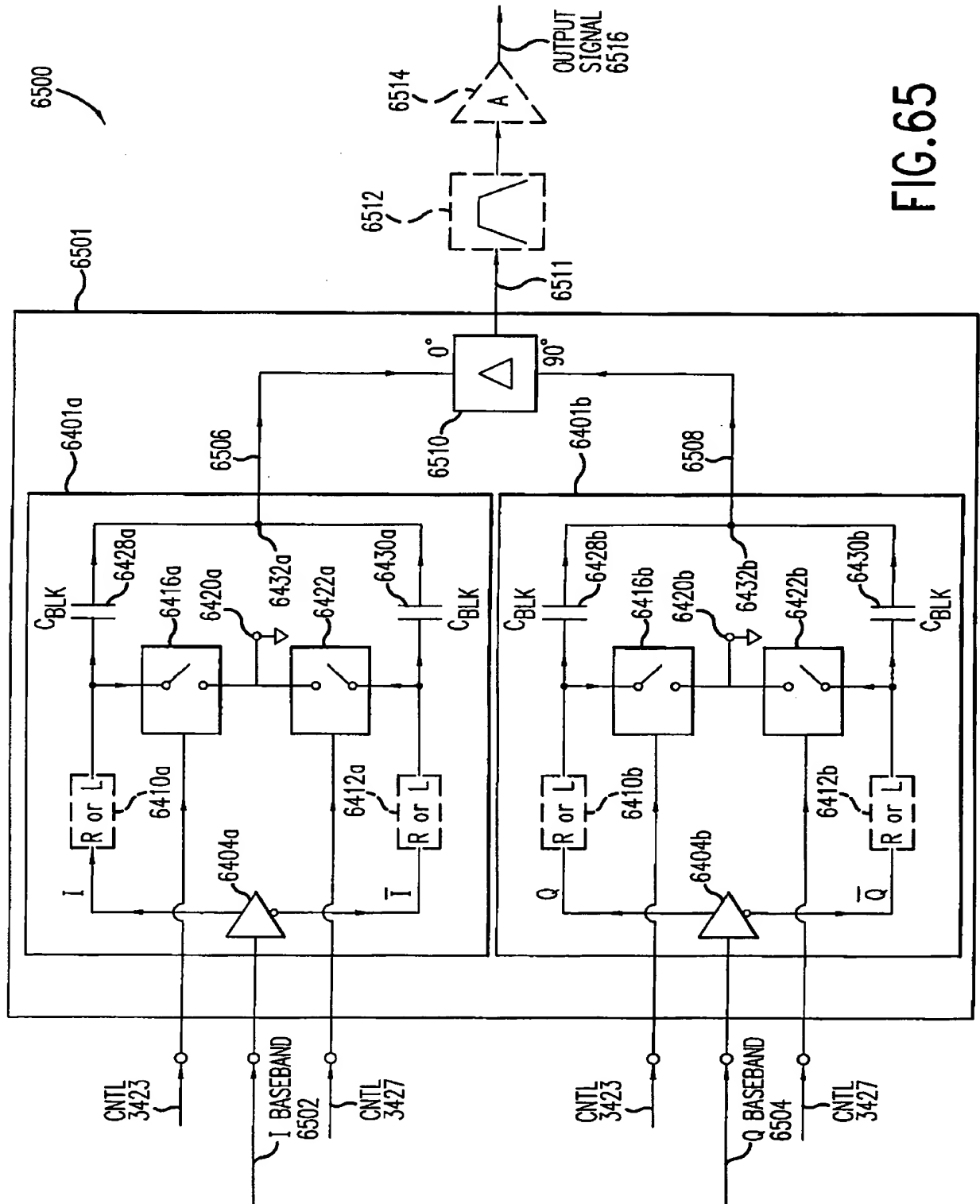


FIG. 65

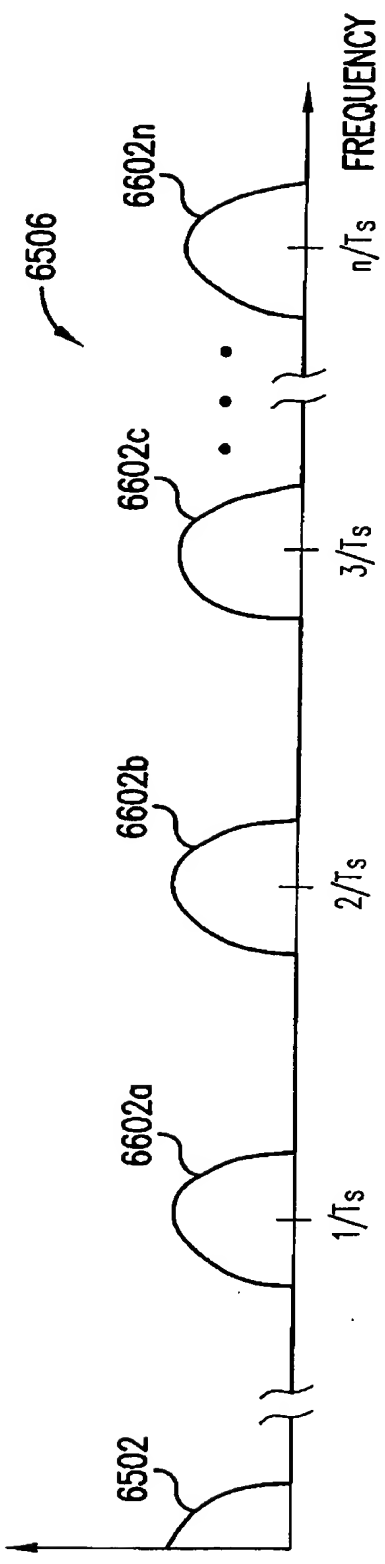


FIG. 66A

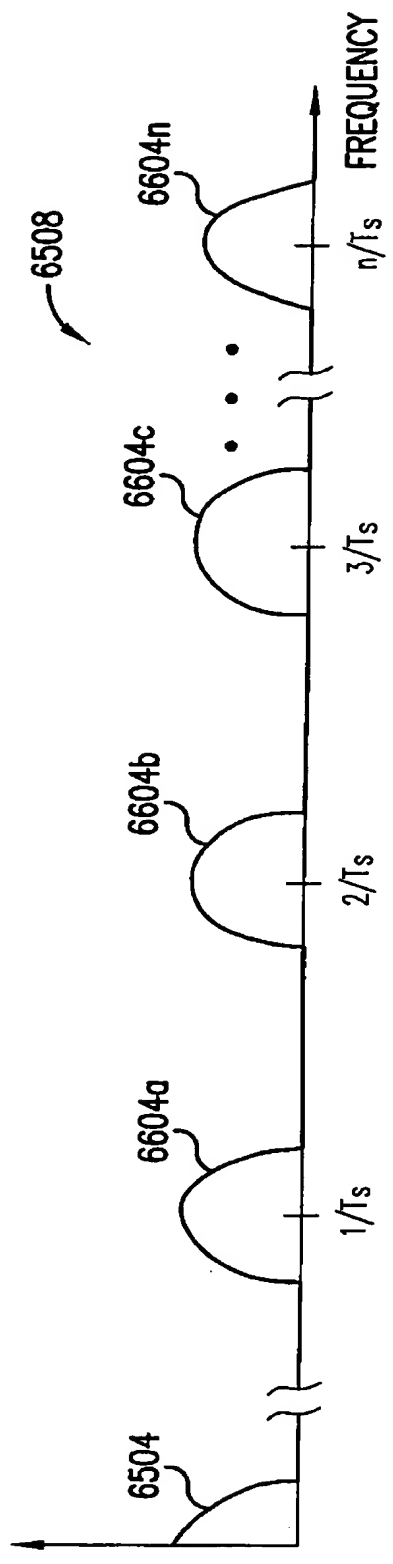


FIG. 66B

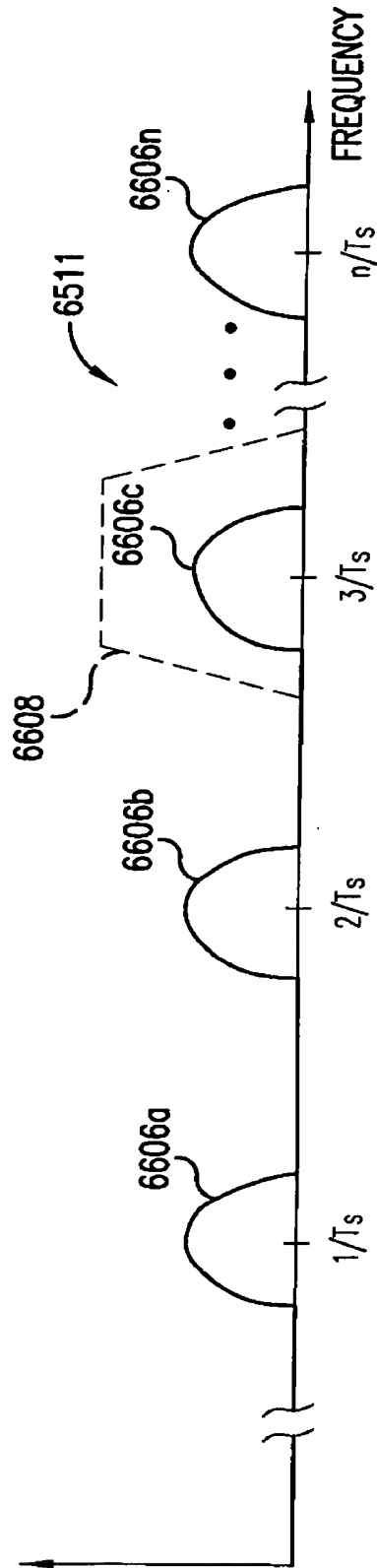


FIG. 66C

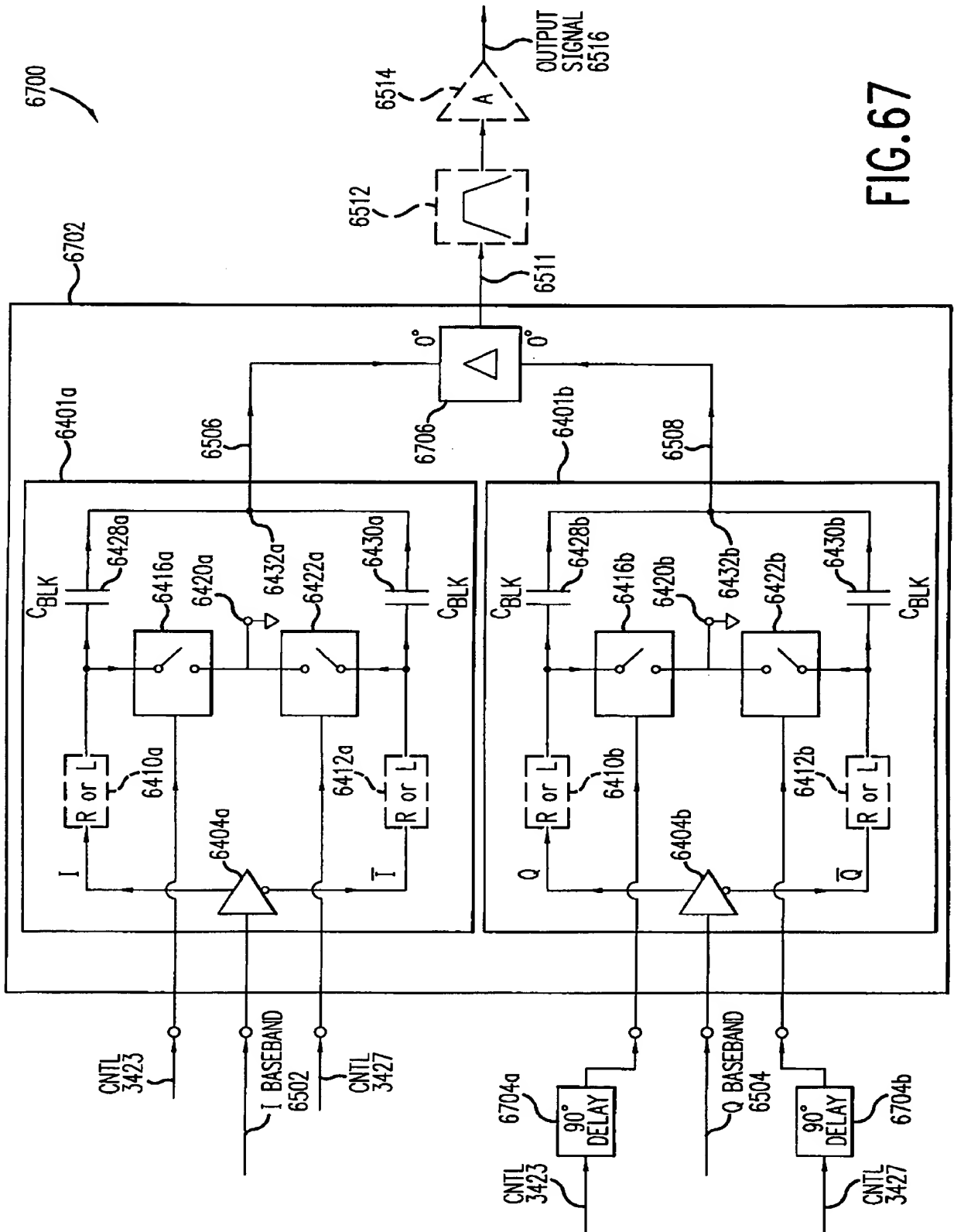


FIG. 67

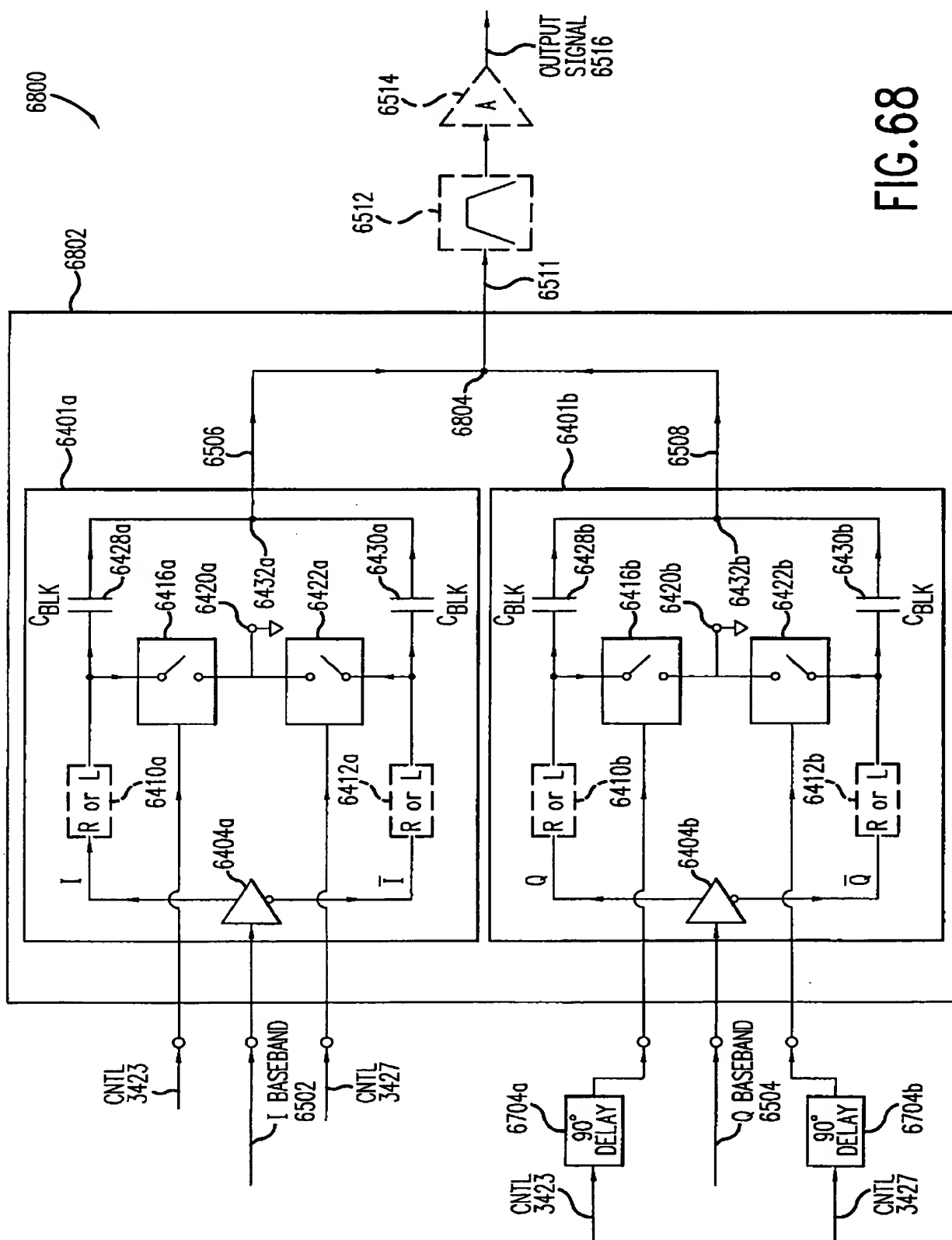


FIG. 68

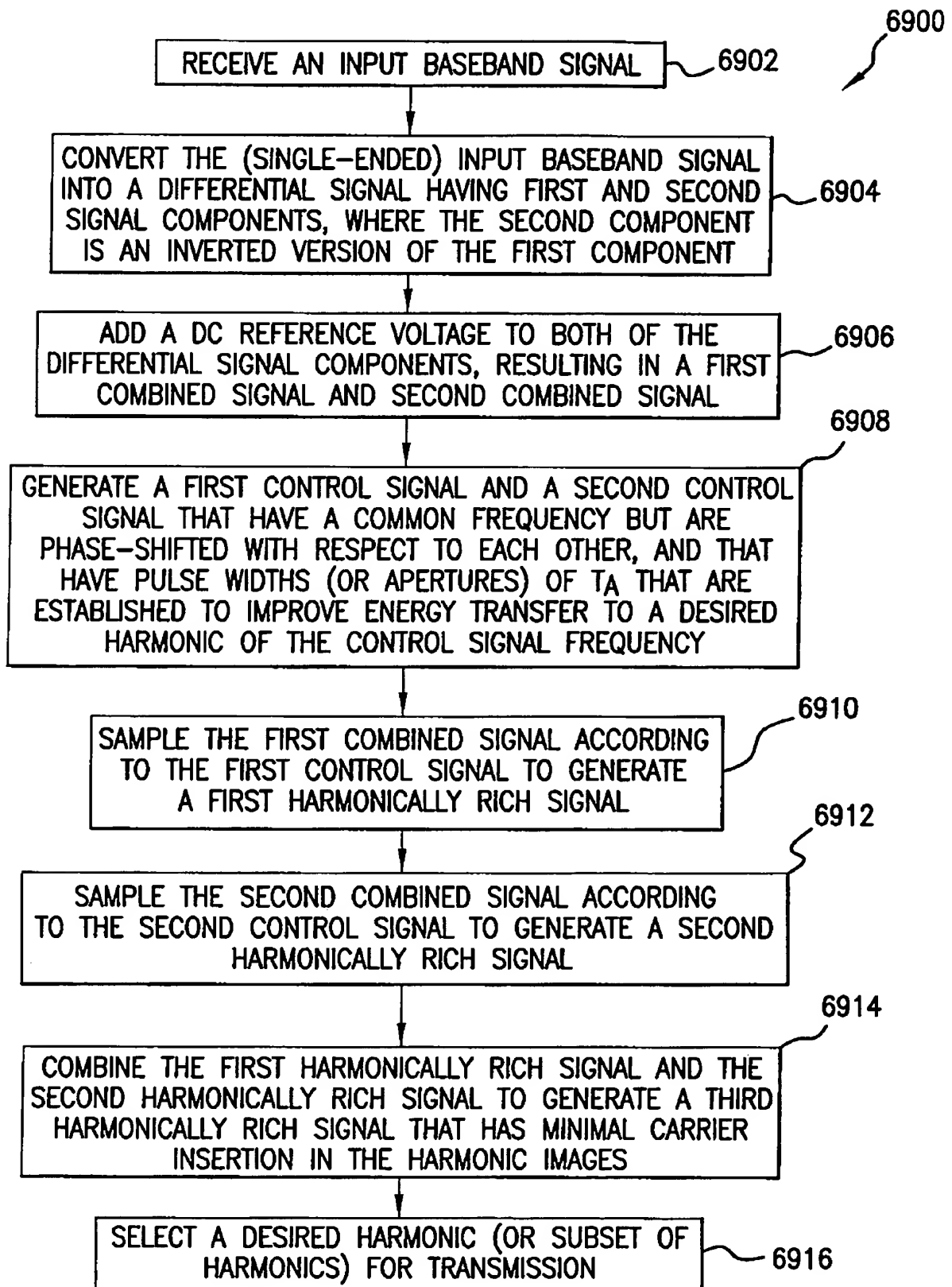


FIG.69



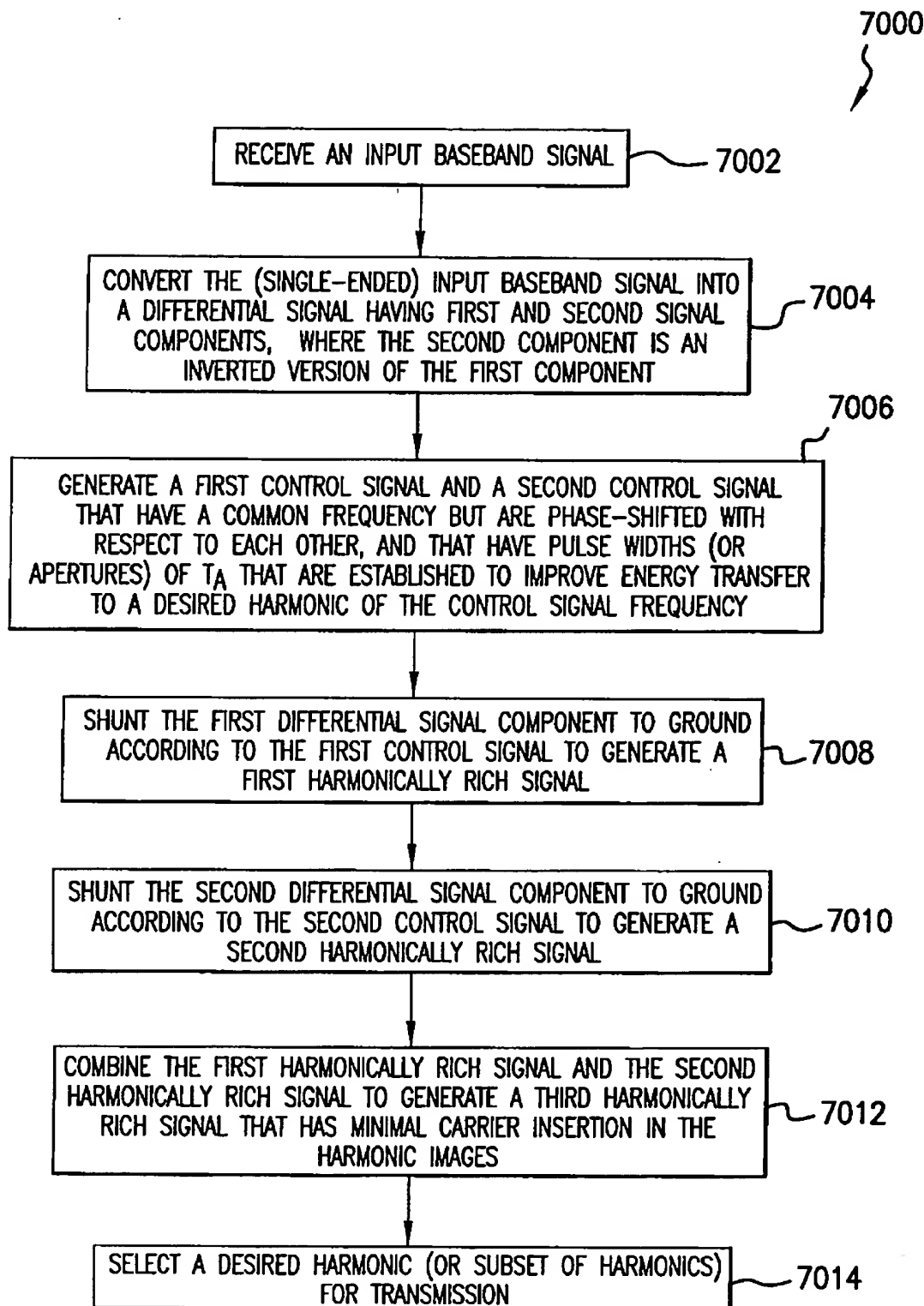


FIG.70

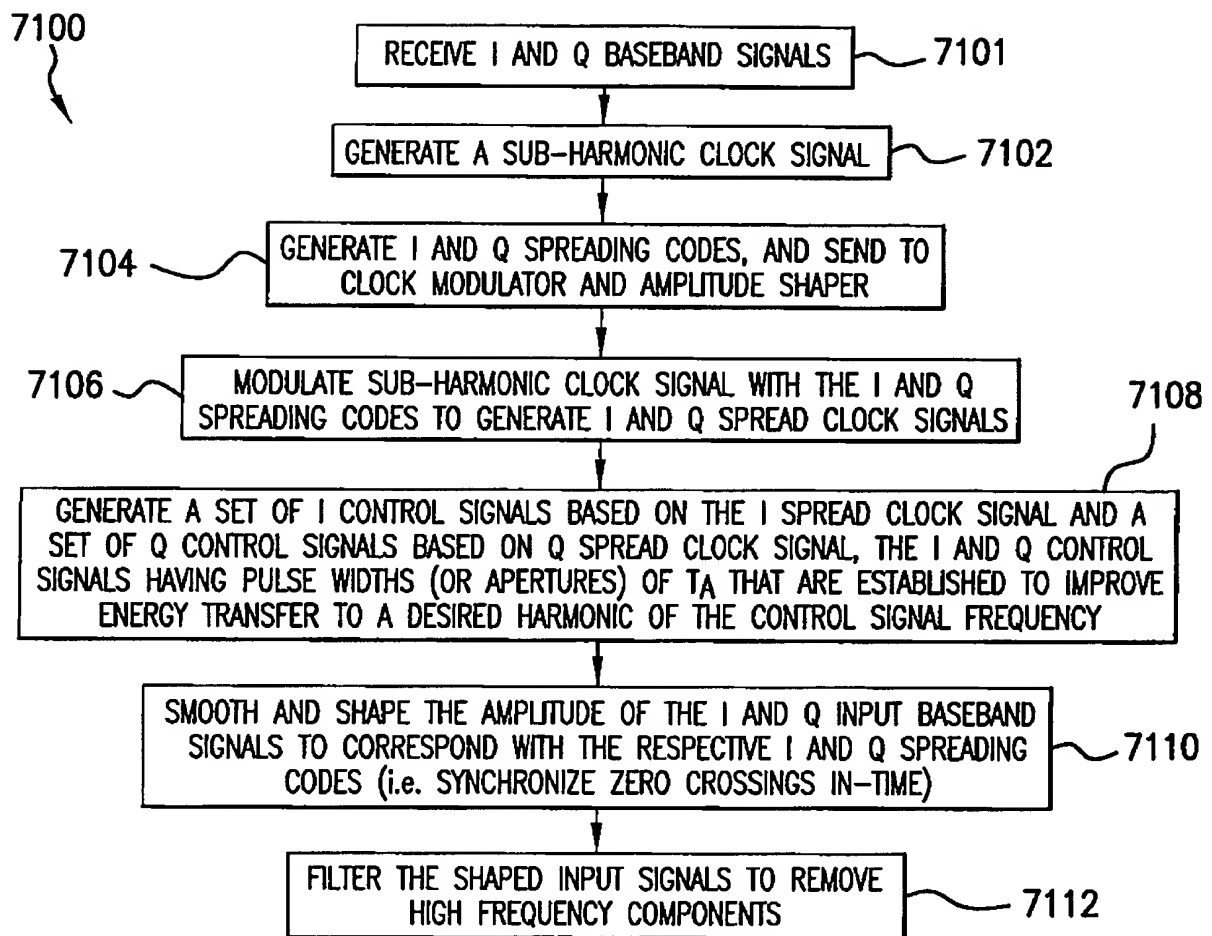


FIG.71A

7100  
(CONTINUED)

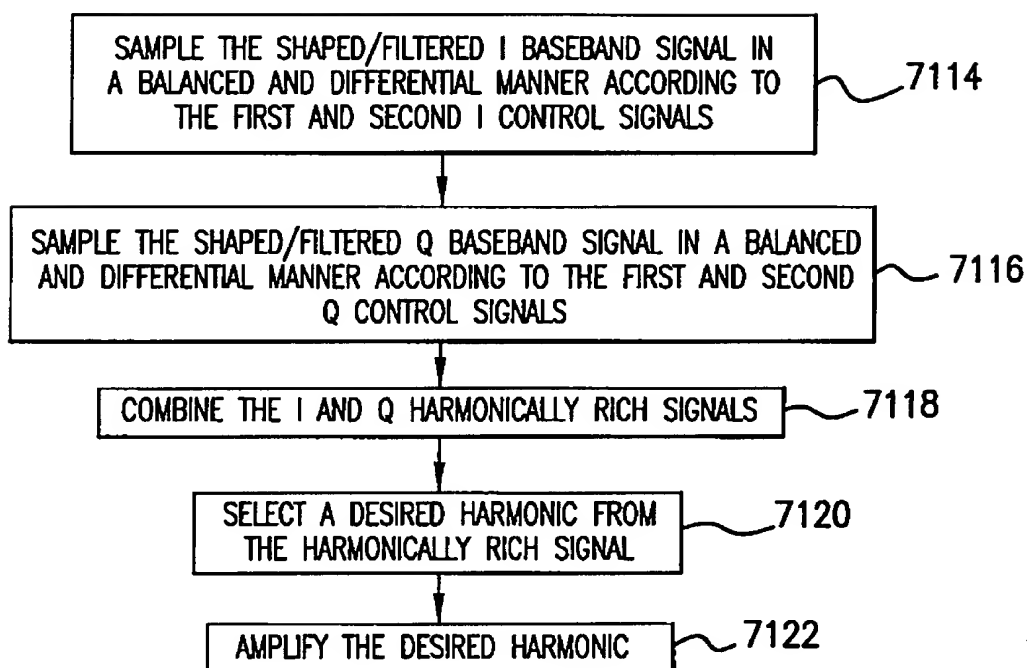


FIG.71B

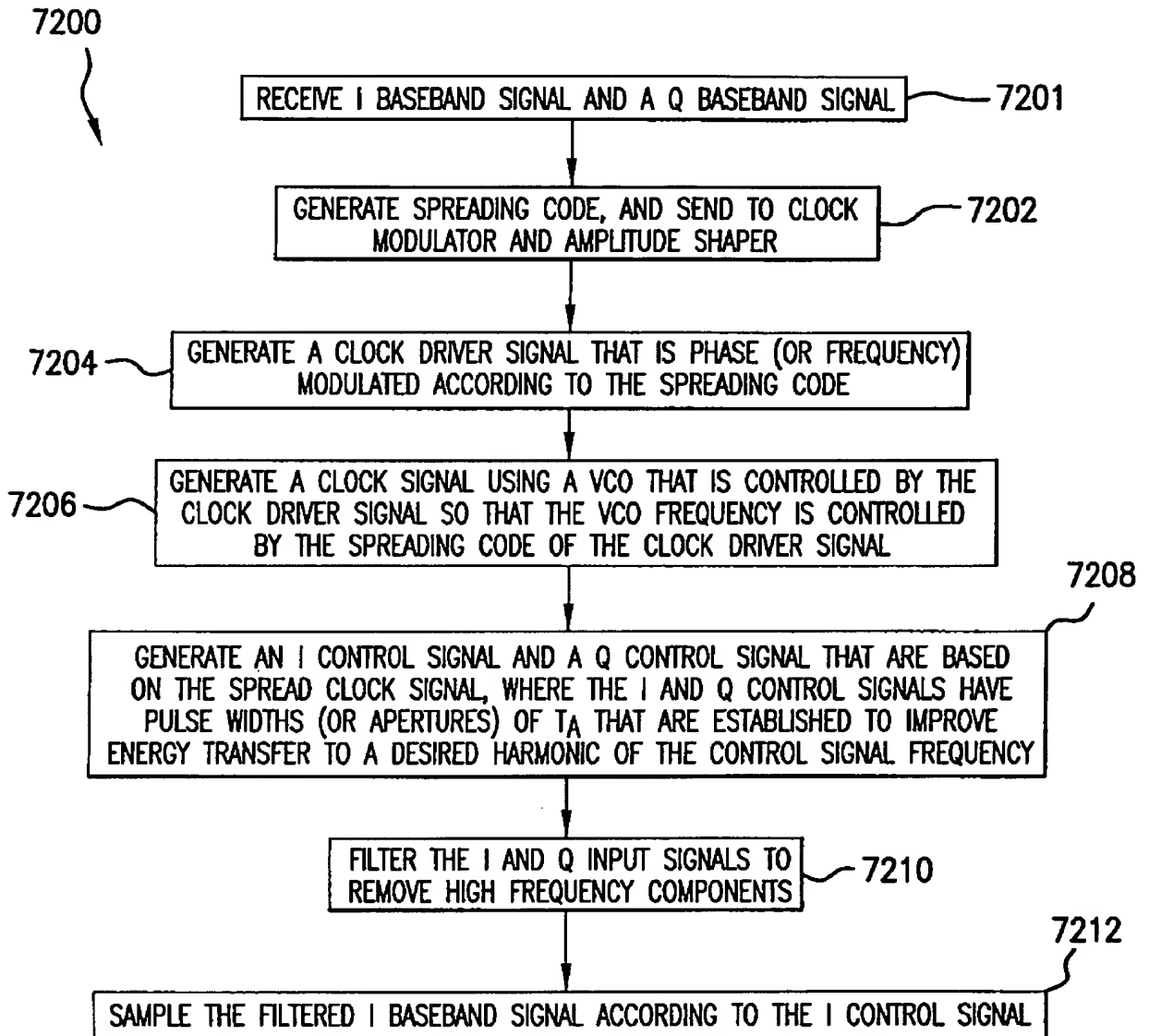


FIG.72A

7200  
(CONTINUED)

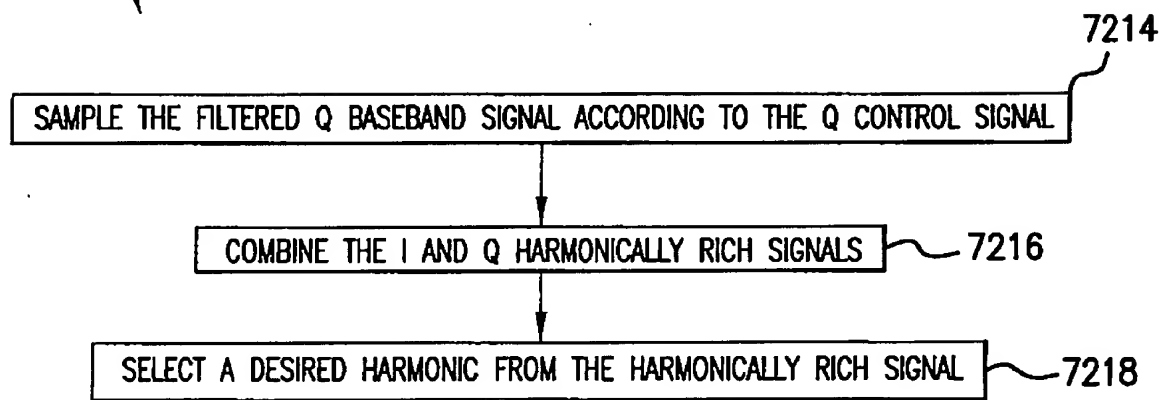
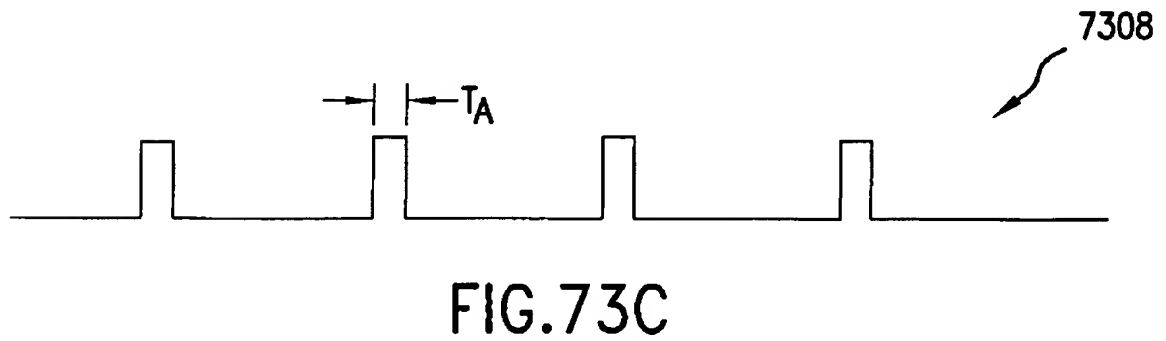
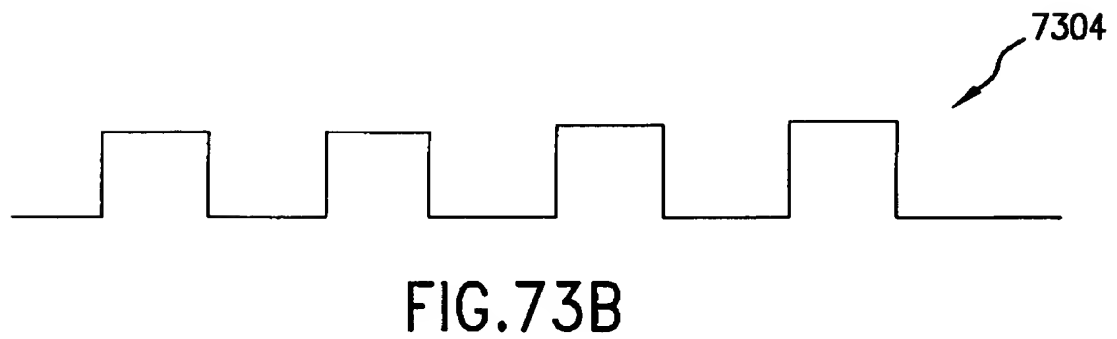
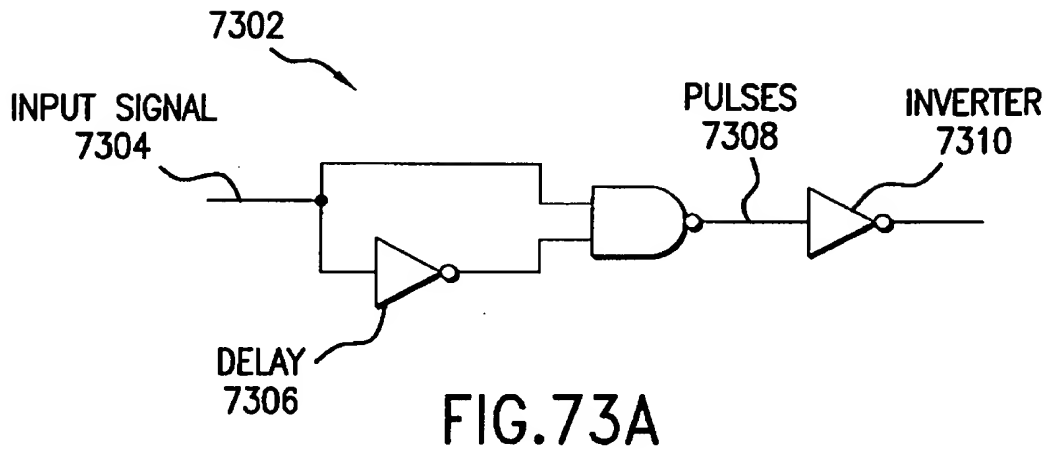


FIG.72B



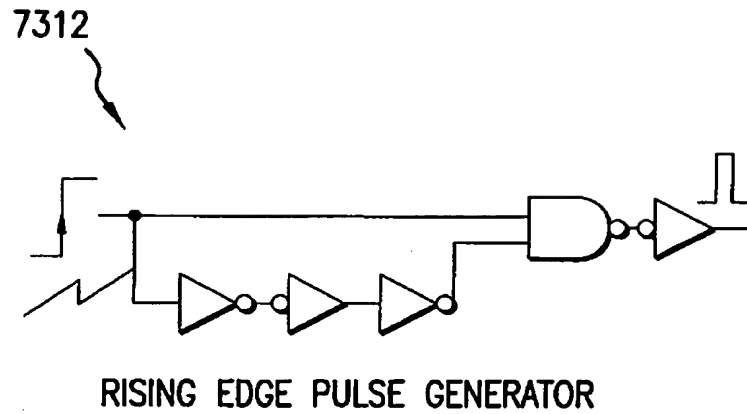


FIG.73D

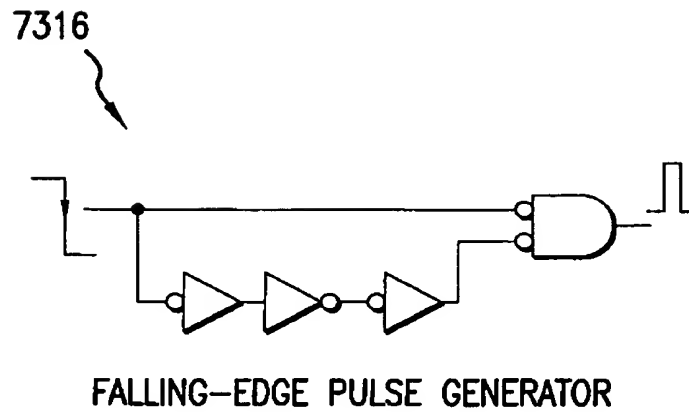
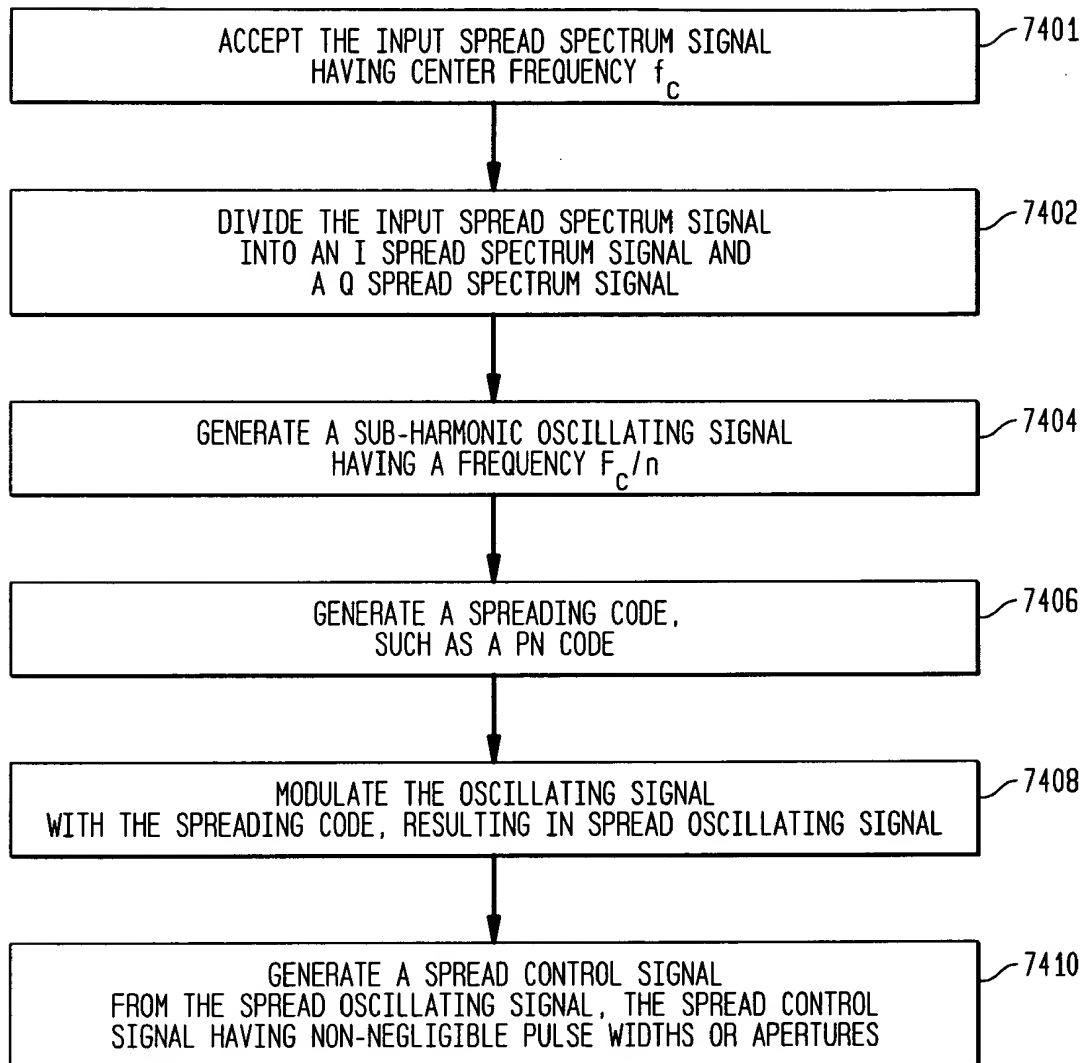


FIG.73E

7400

FIG. 74A





7400  
(CONT.)

**FIG. 74B**

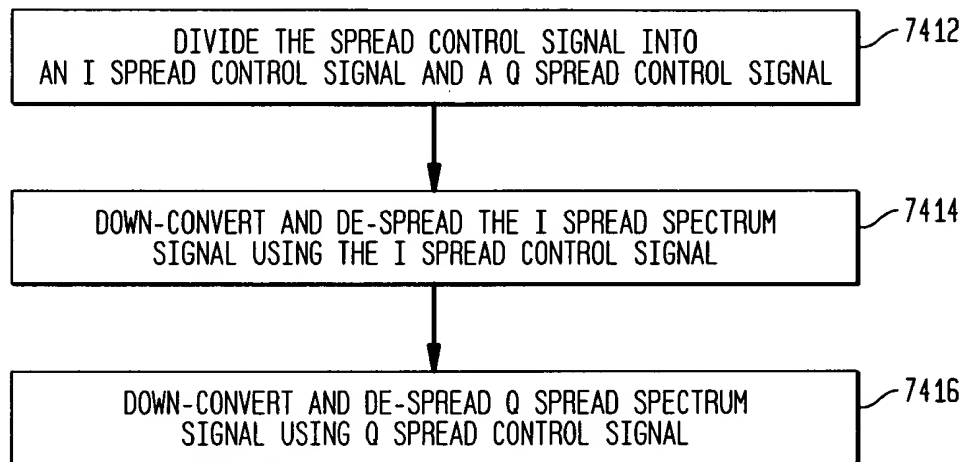


FIG. 75

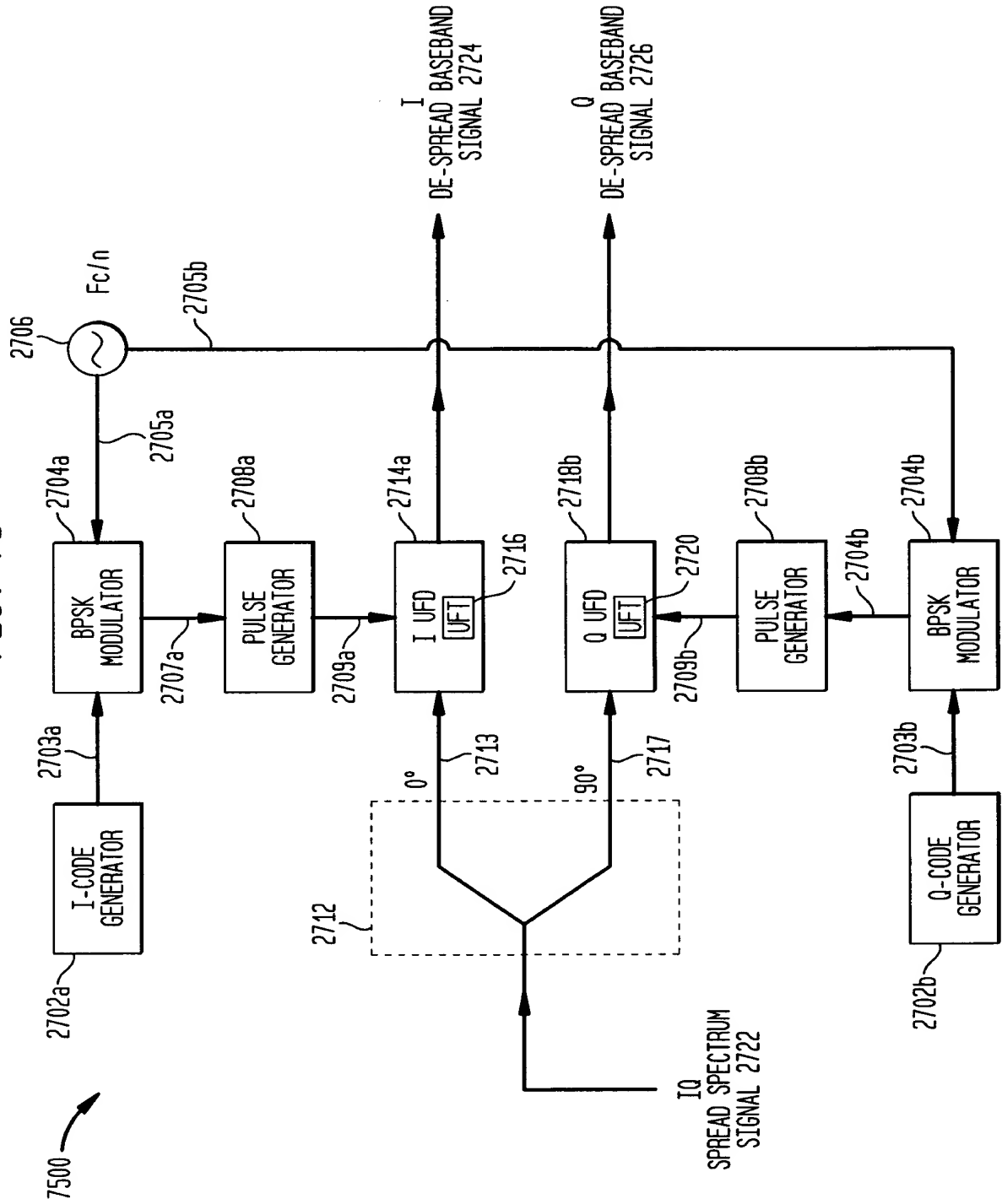
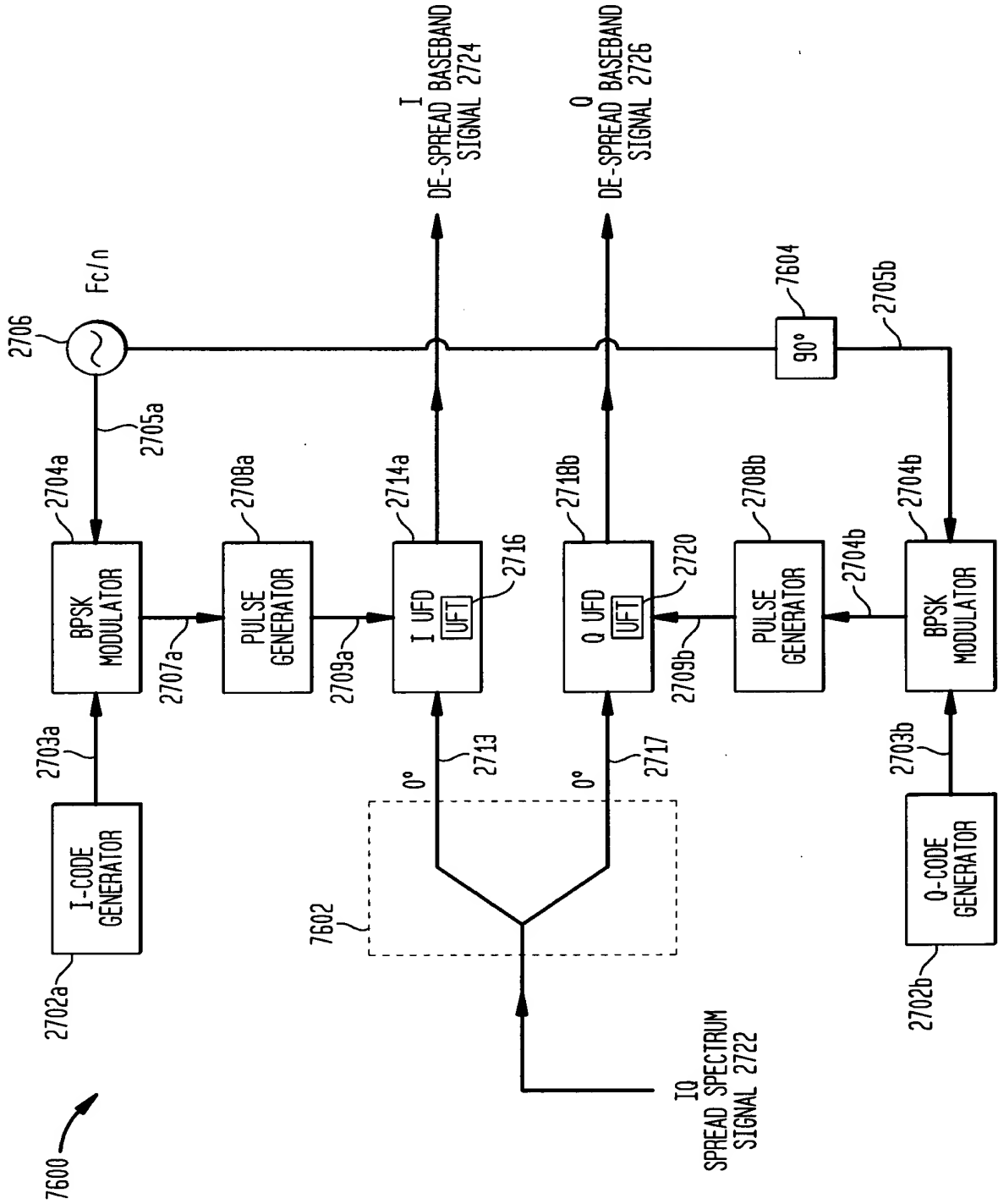
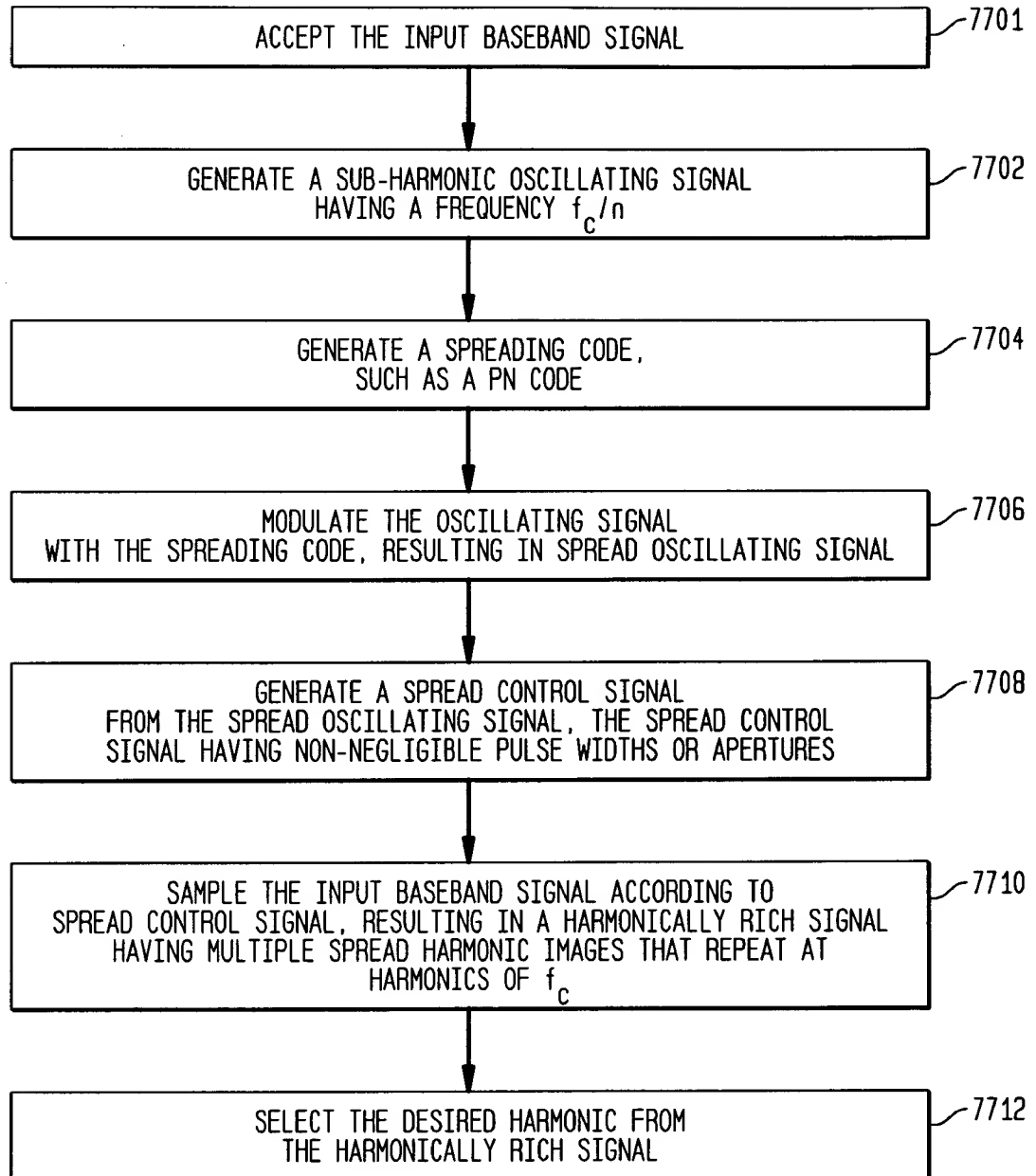


FIG. 76



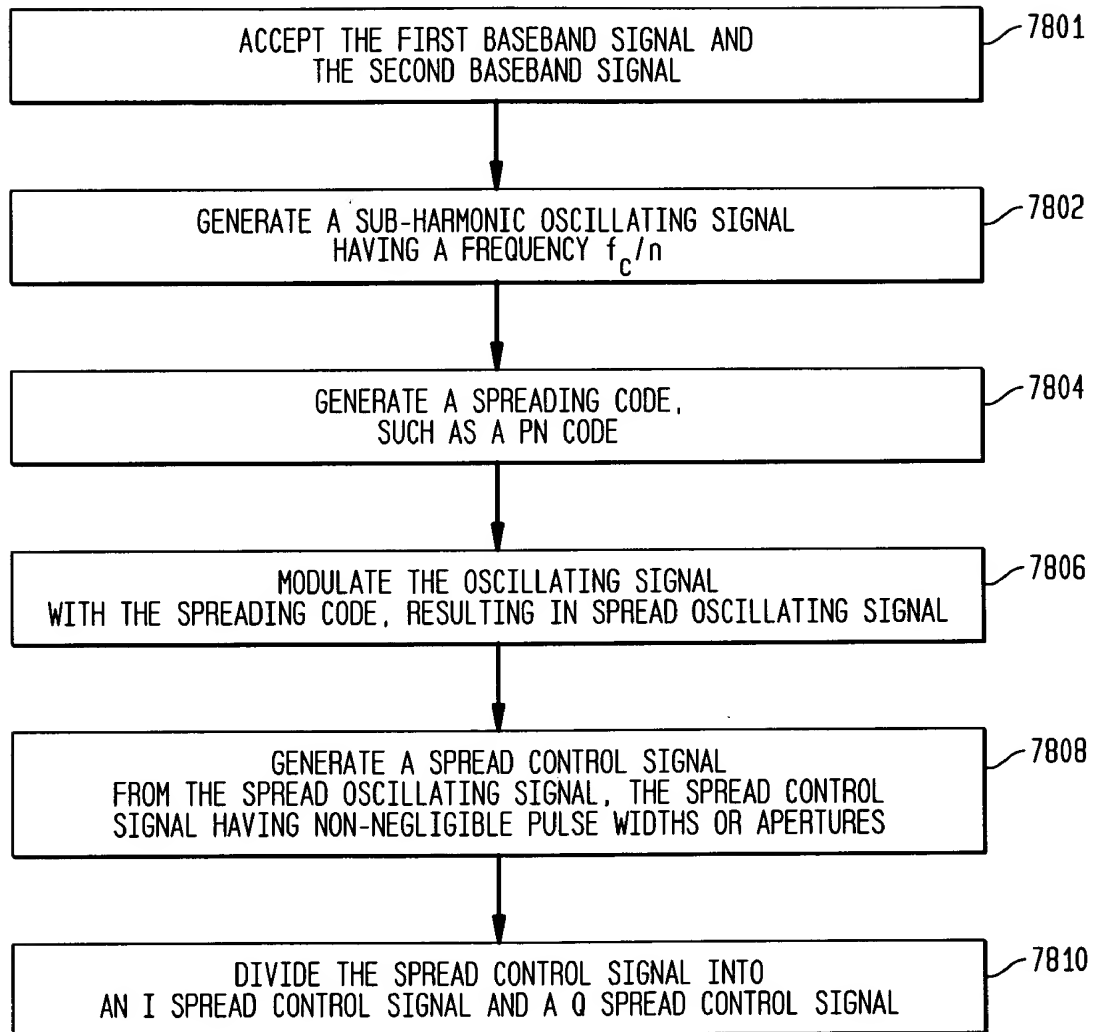
7700 ↗

**FIG. 77**



7800

FIG. 78A



7800  
(CONT.)

**FIG. 78B**

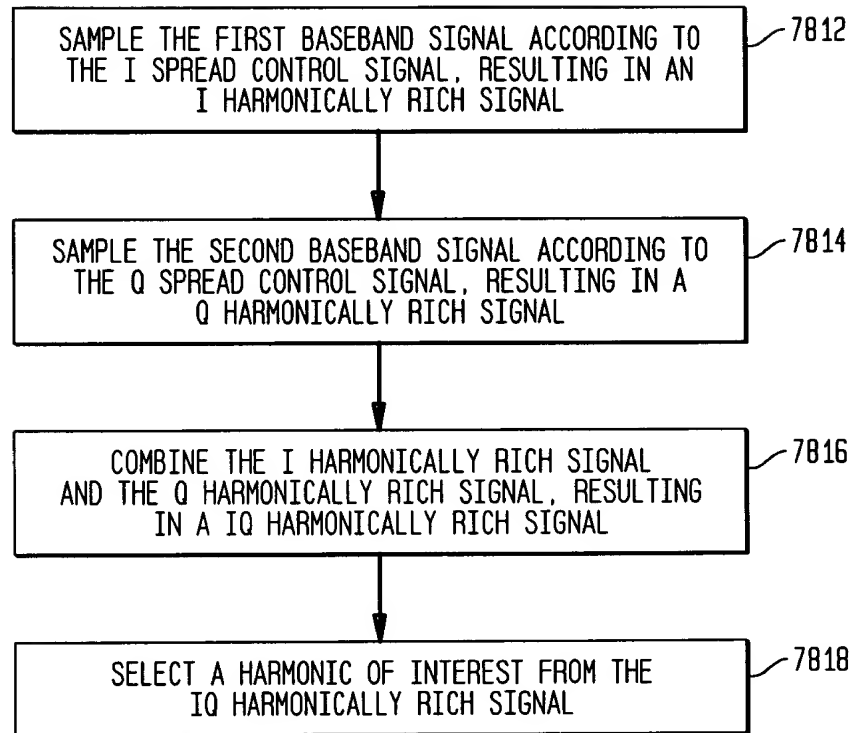


FIG. 79

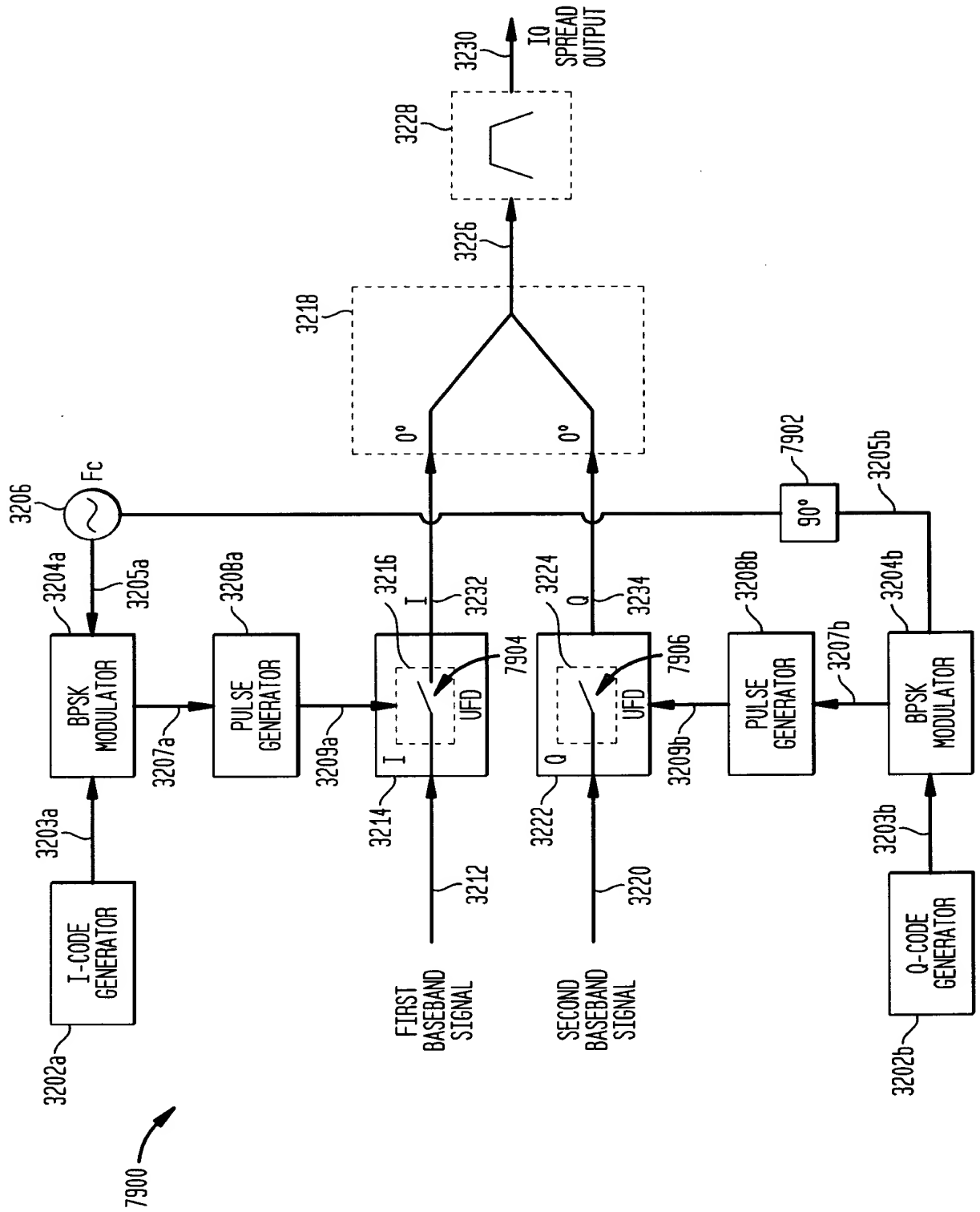
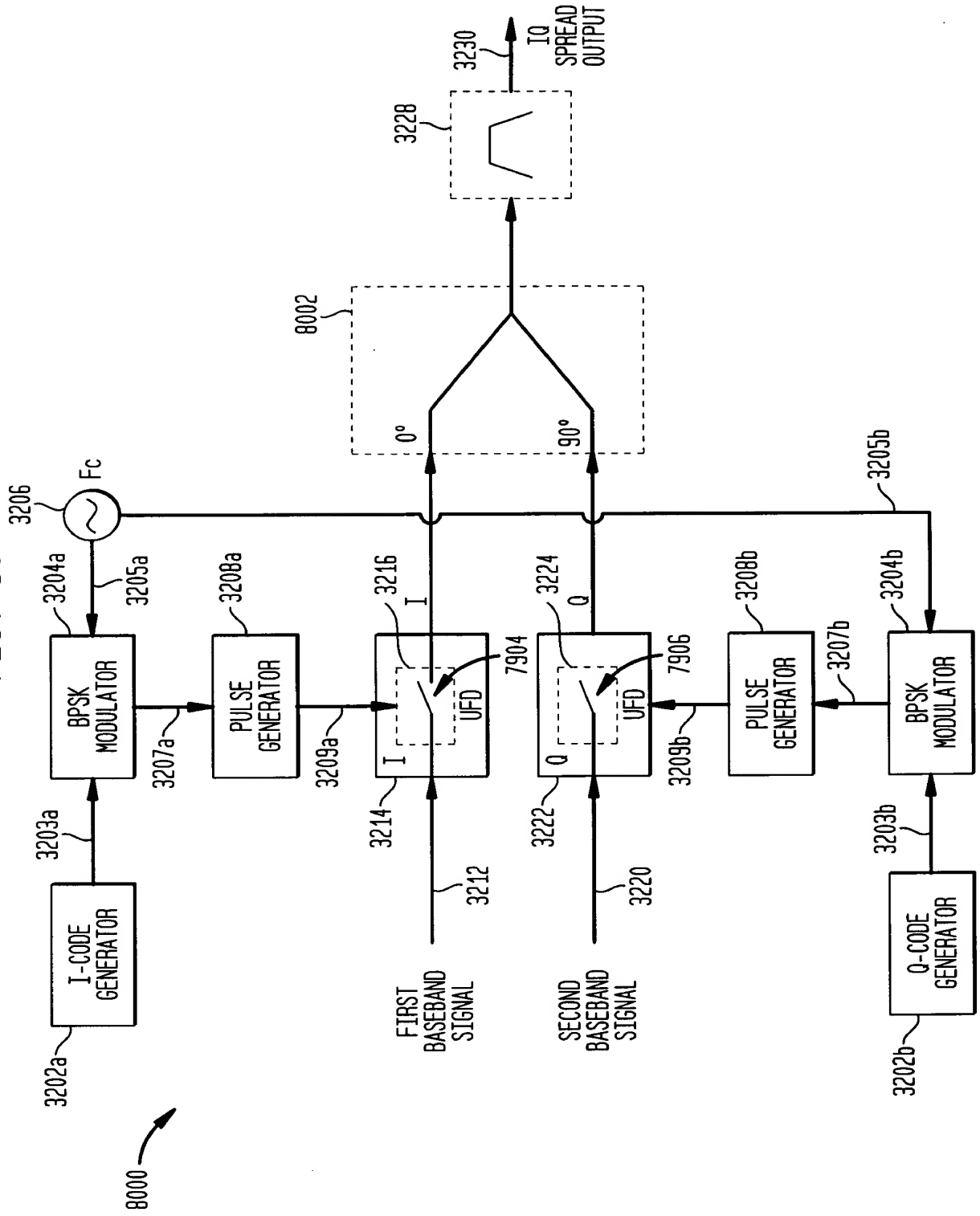
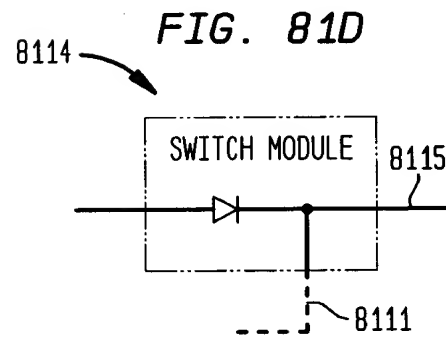
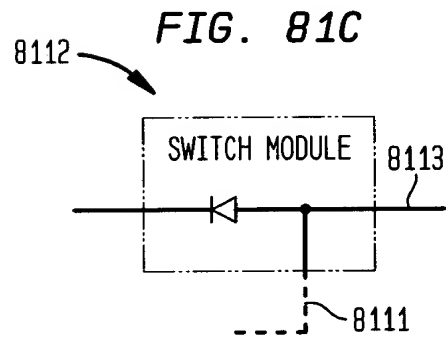
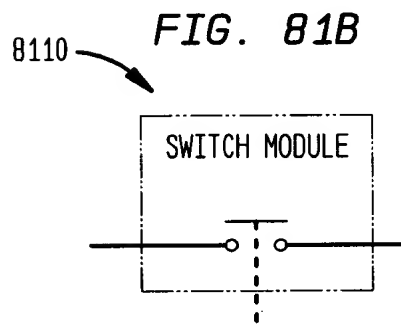
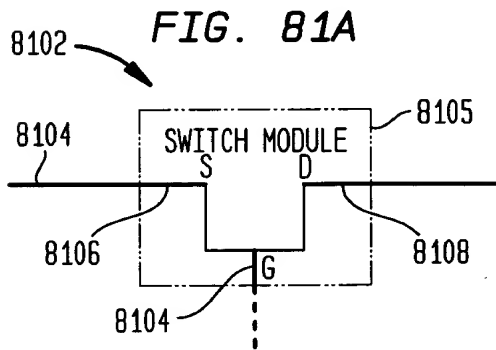


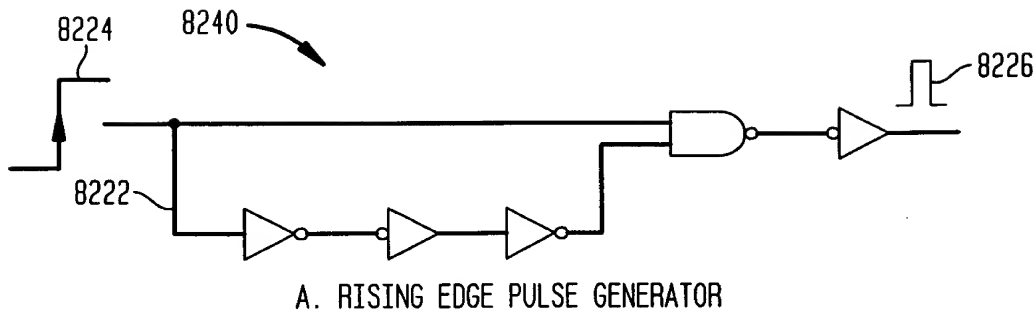
FIG. 80



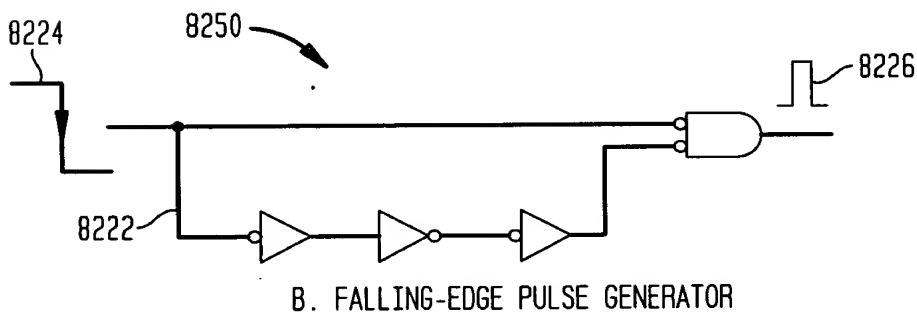




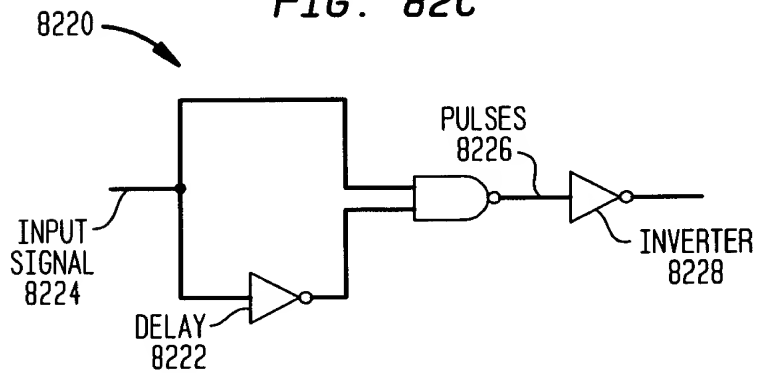
**FIG. 82A**



**FIG. 82B**



**FIG. 82C**



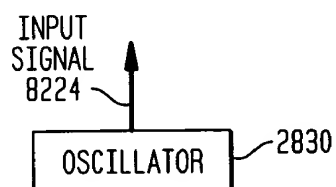
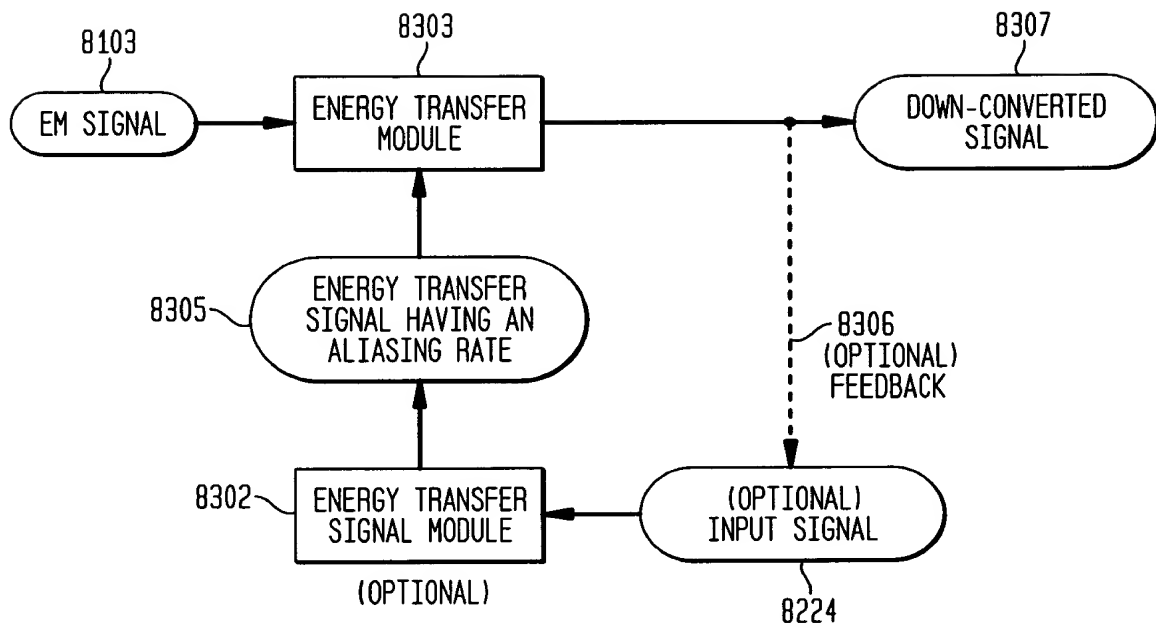
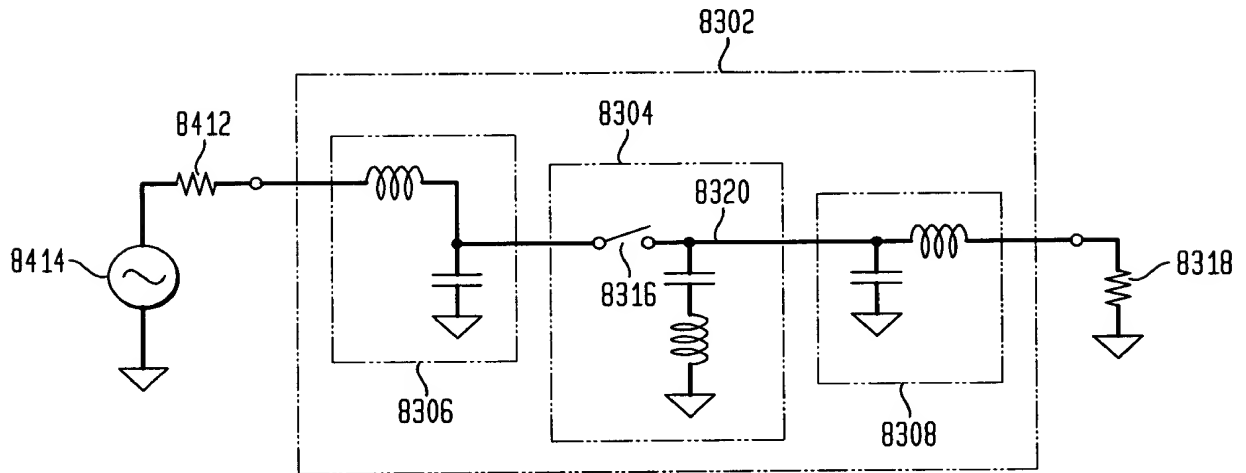


FIG. 83



**FIG. 84**

IMPEDANCE MATCHED ALIASING MODULE



**FIG. 85A**

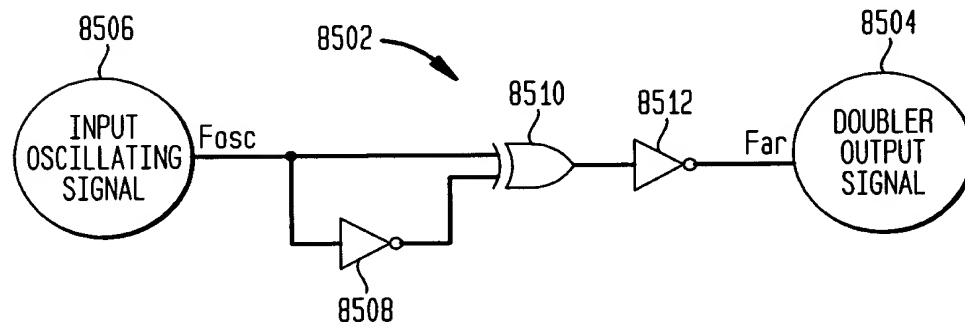


FIG. 85B

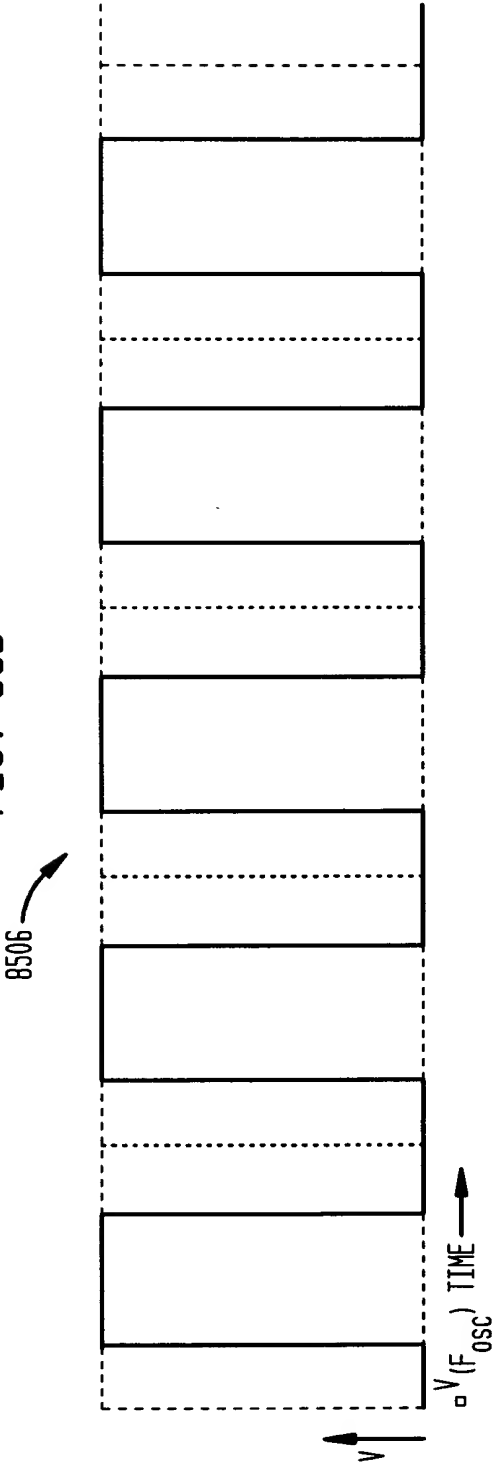
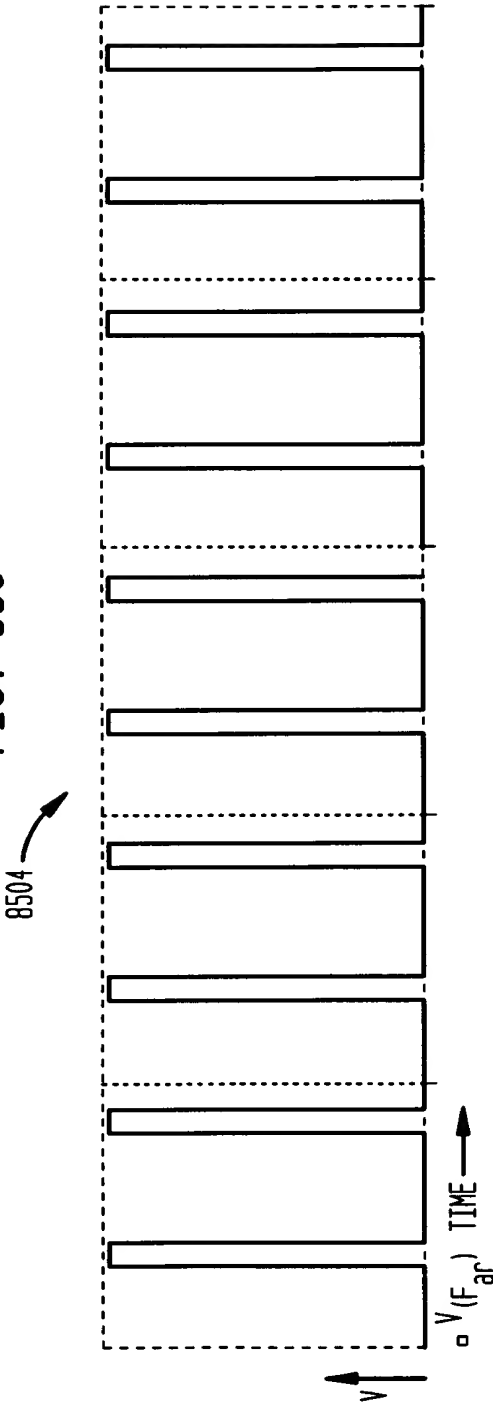
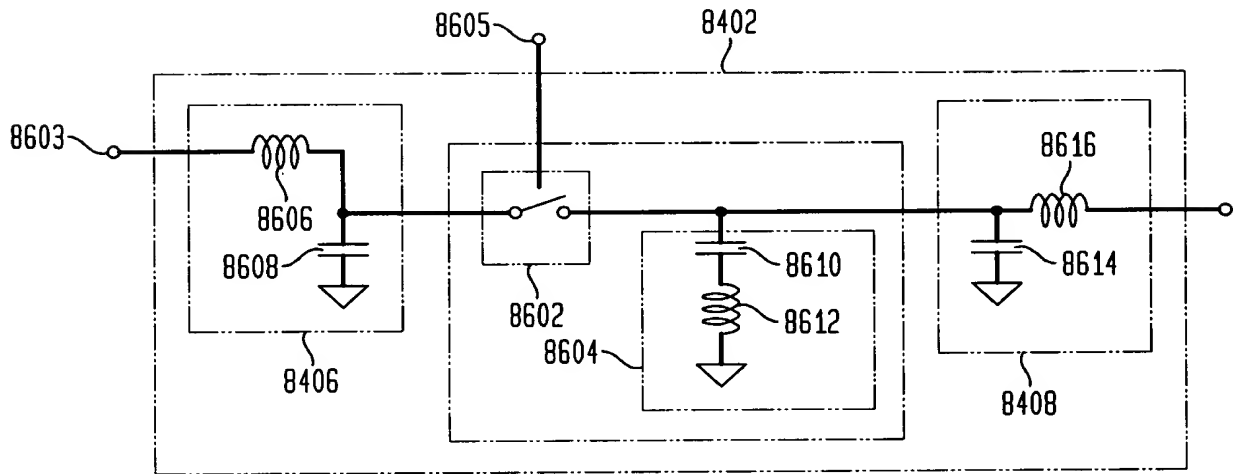


FIG. 85C

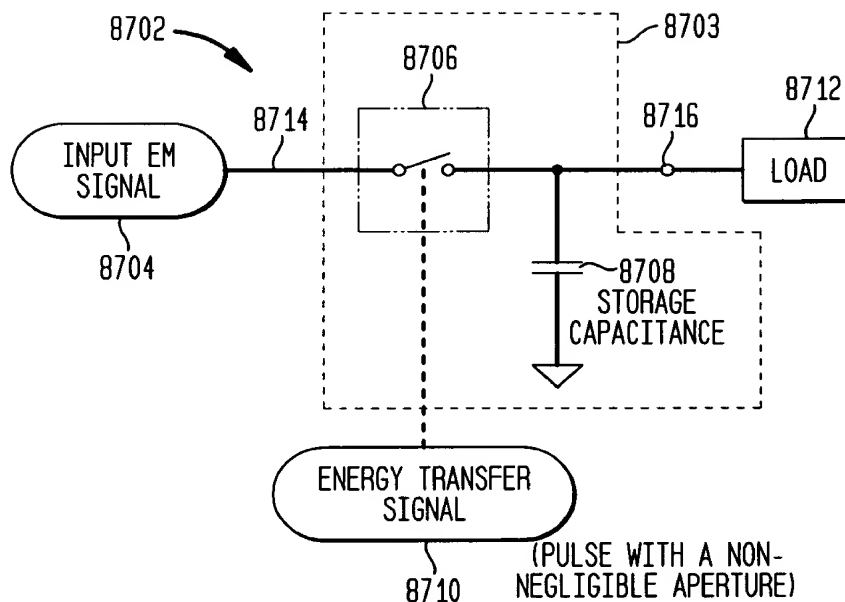


**FIG. 86**

**ALIASING MODULE**



**FIG. 87A**



**FIG. 87**

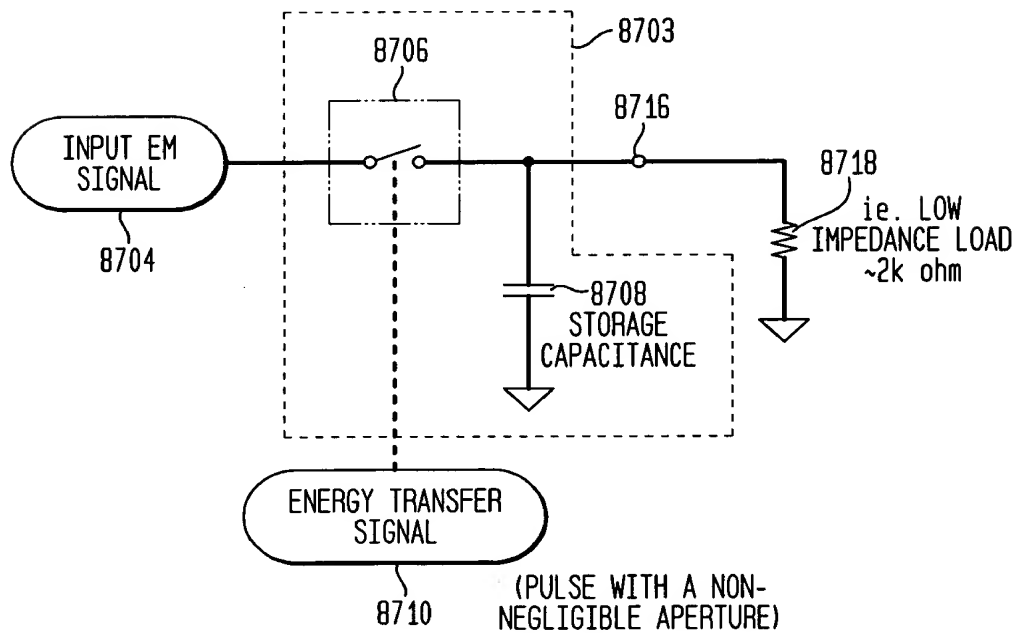
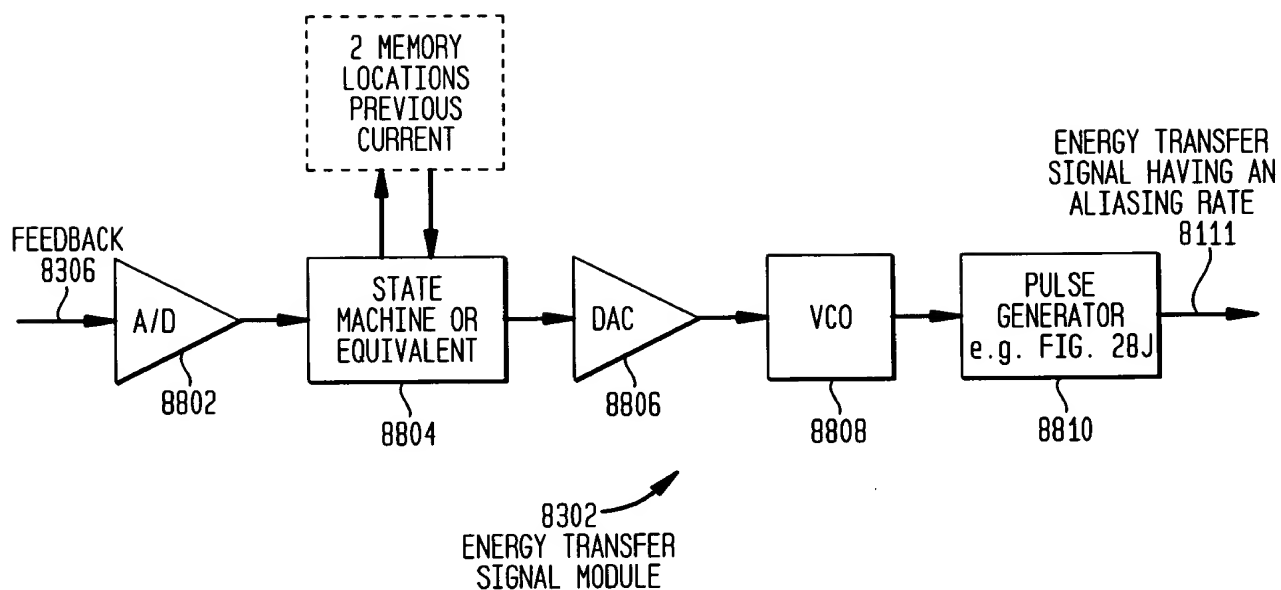
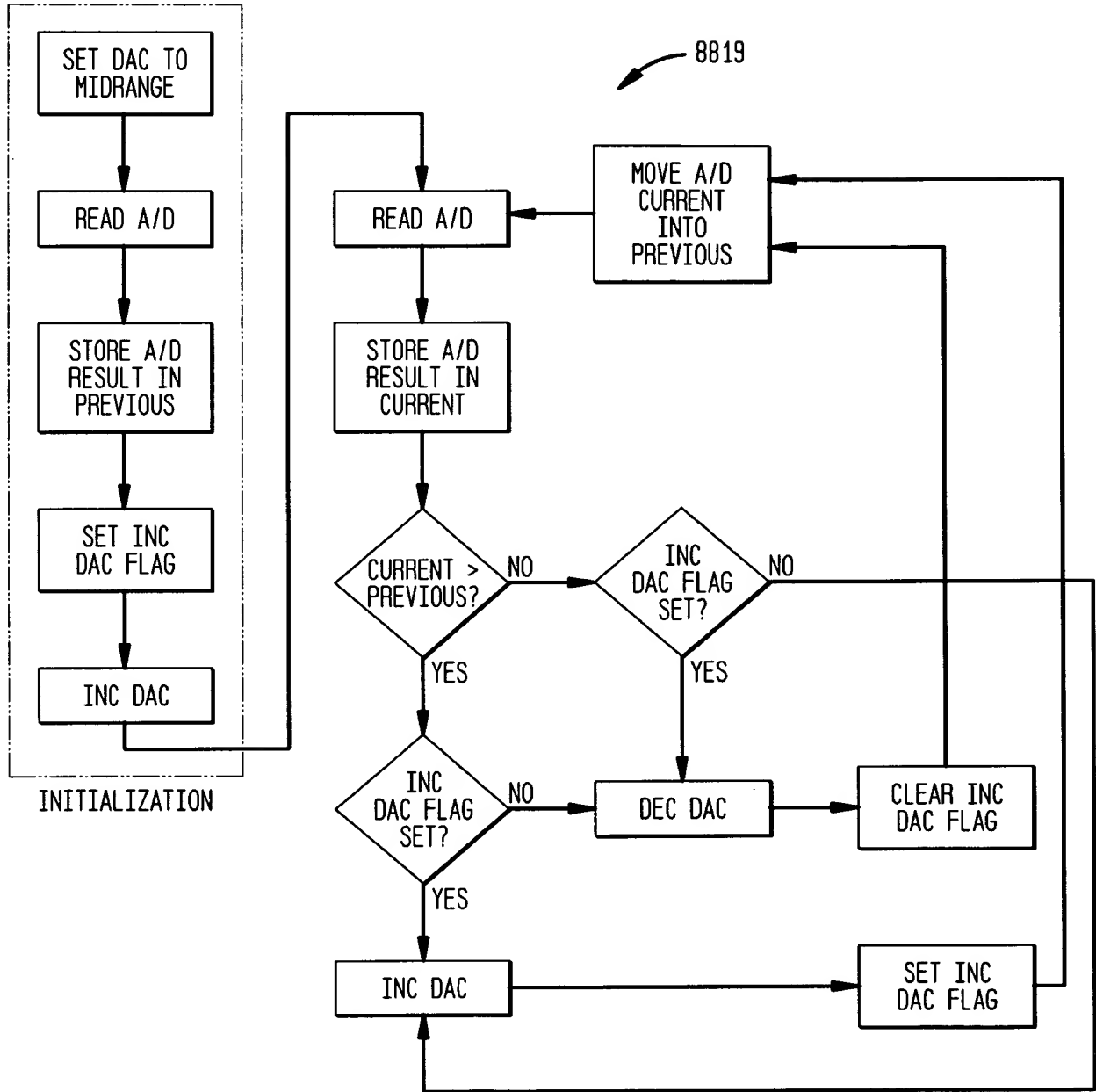




FIG. 88A

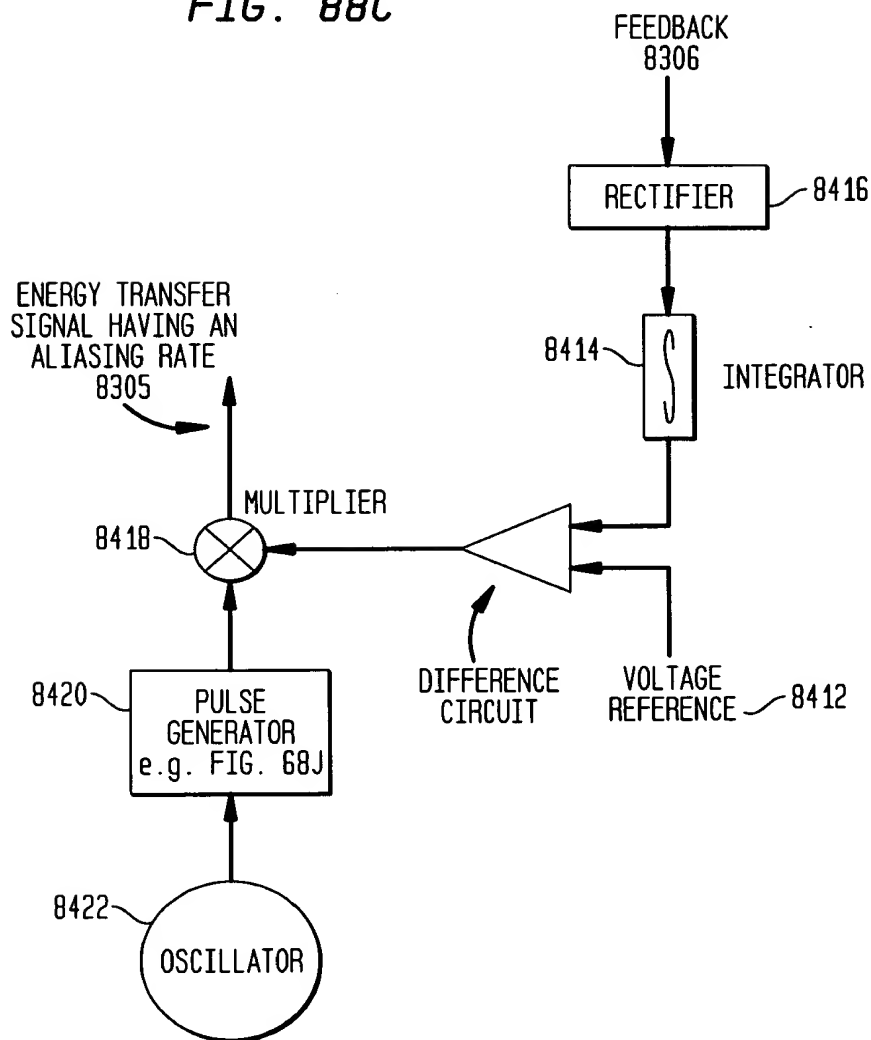


**FIG. 88B**



STATE MACHINE FLOWCHART

**FIG. 88C**



ENERGY TRANSFER SIGNAL MODULE 8302

FIG. 89

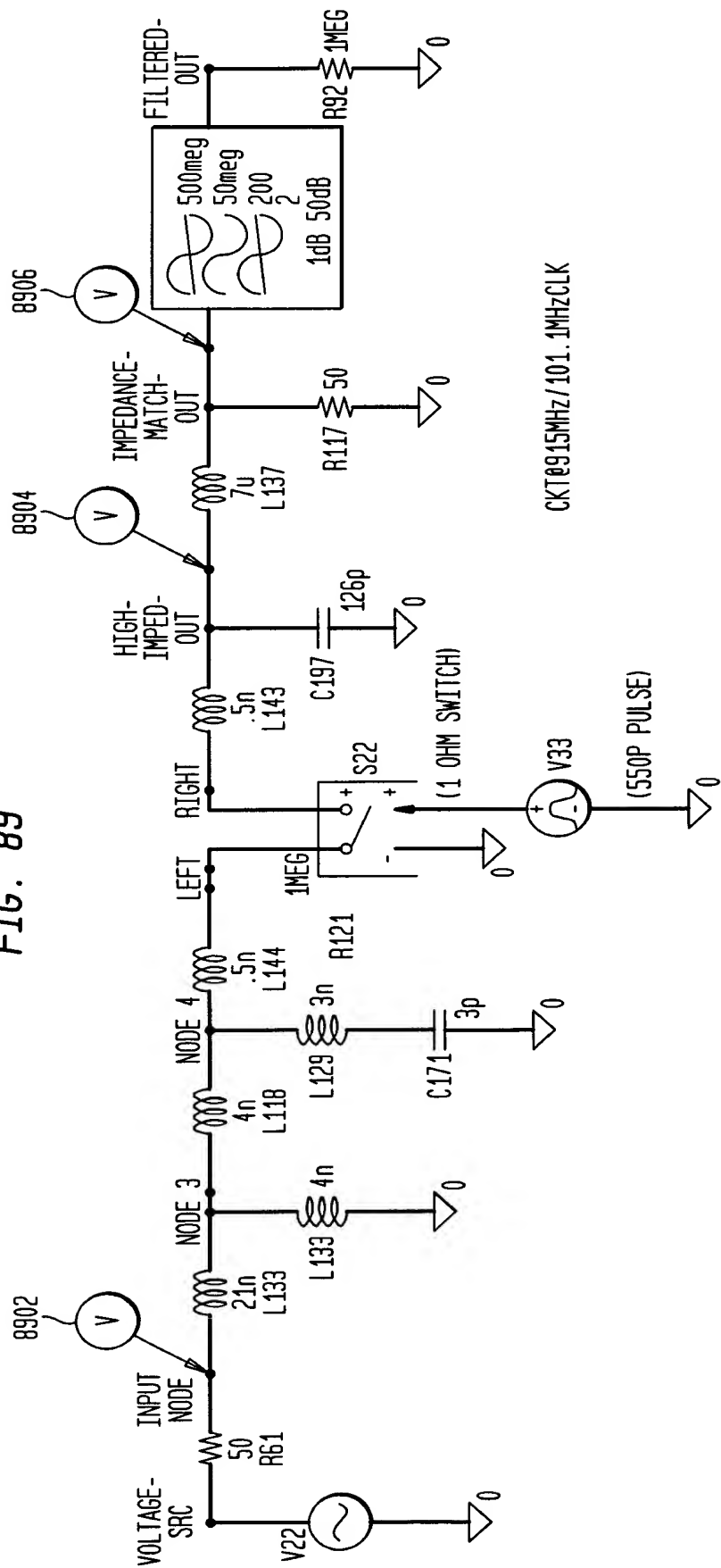


FIG. 90

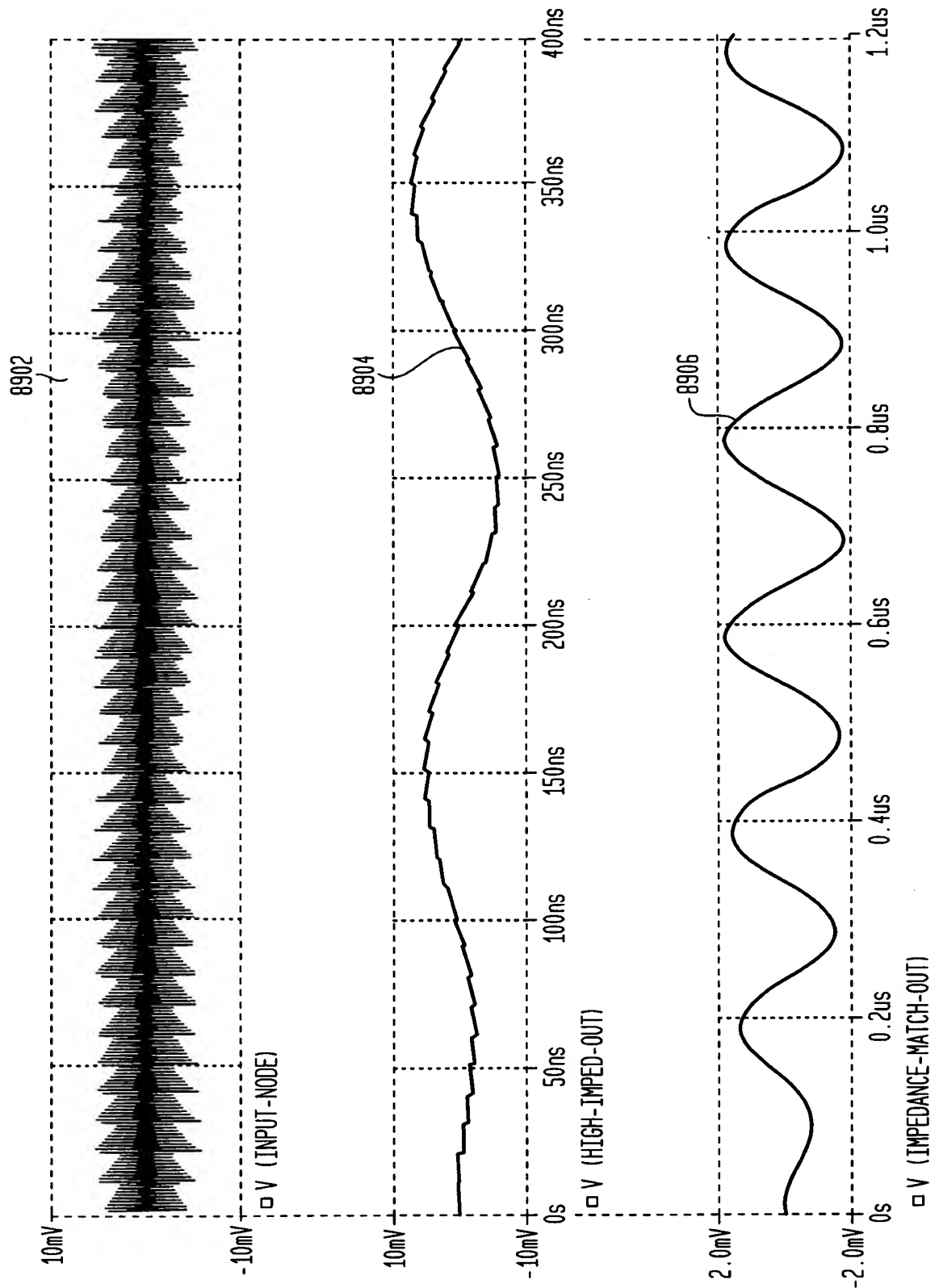


FIG. 91

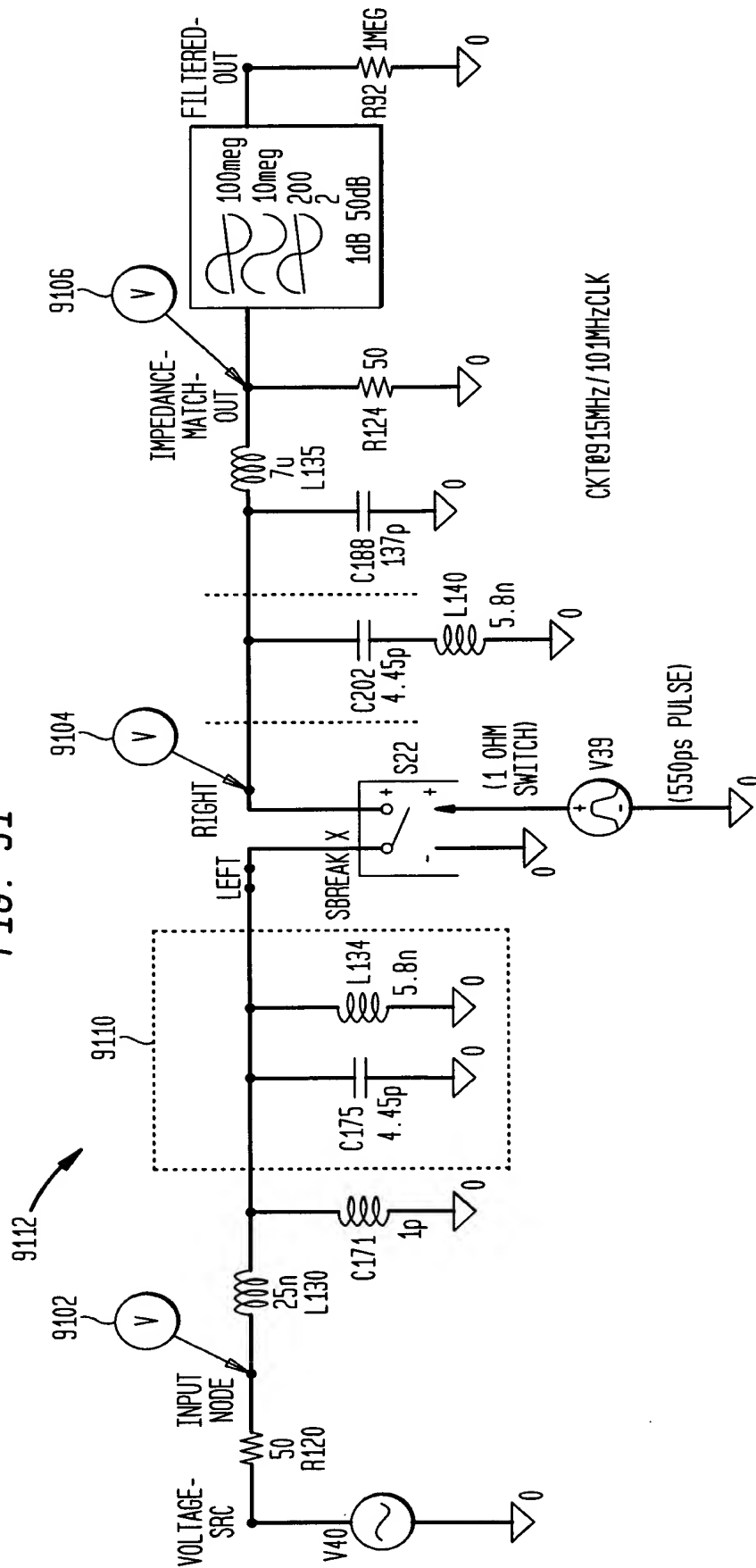


FIG. 92

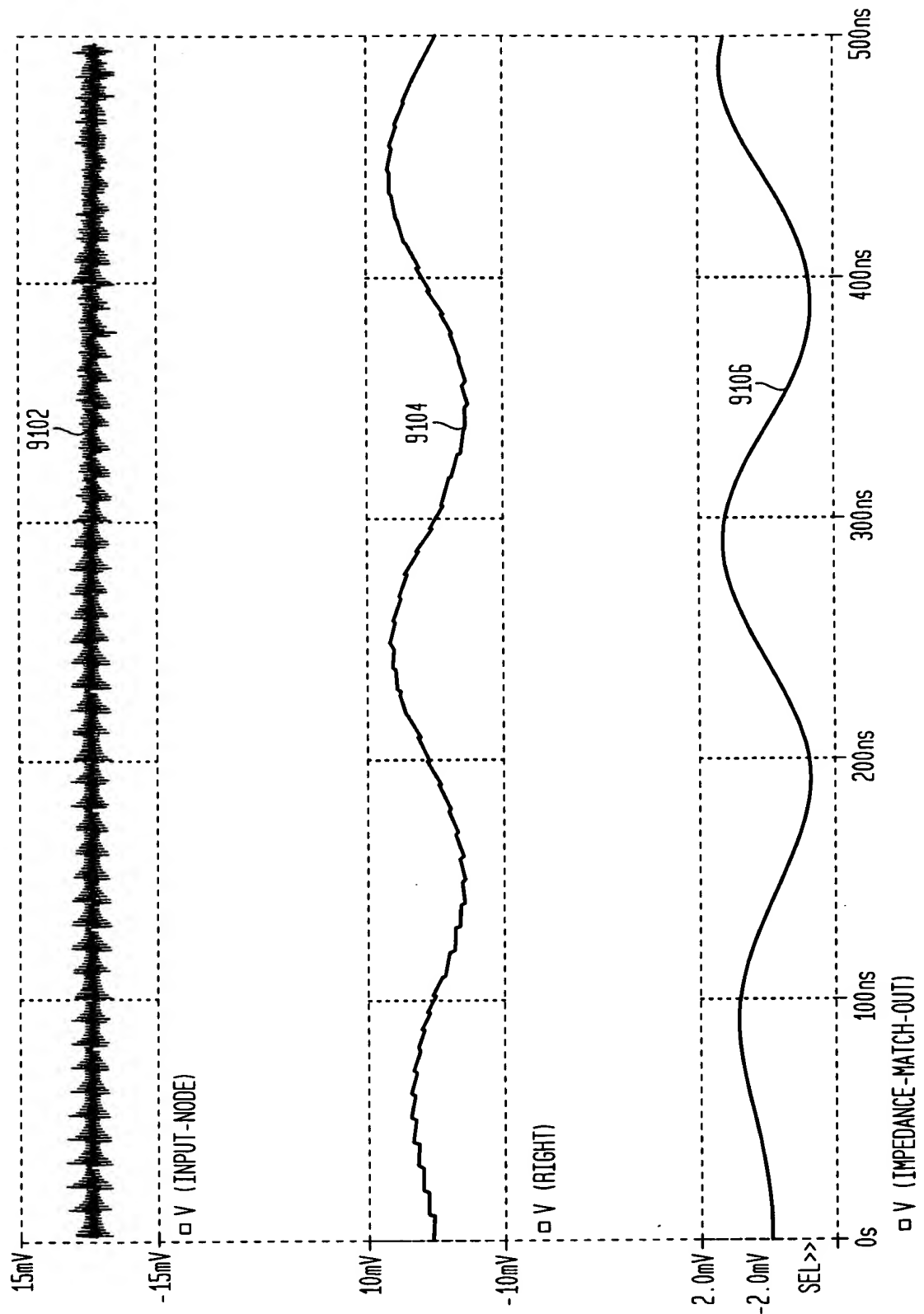


FIG. 93

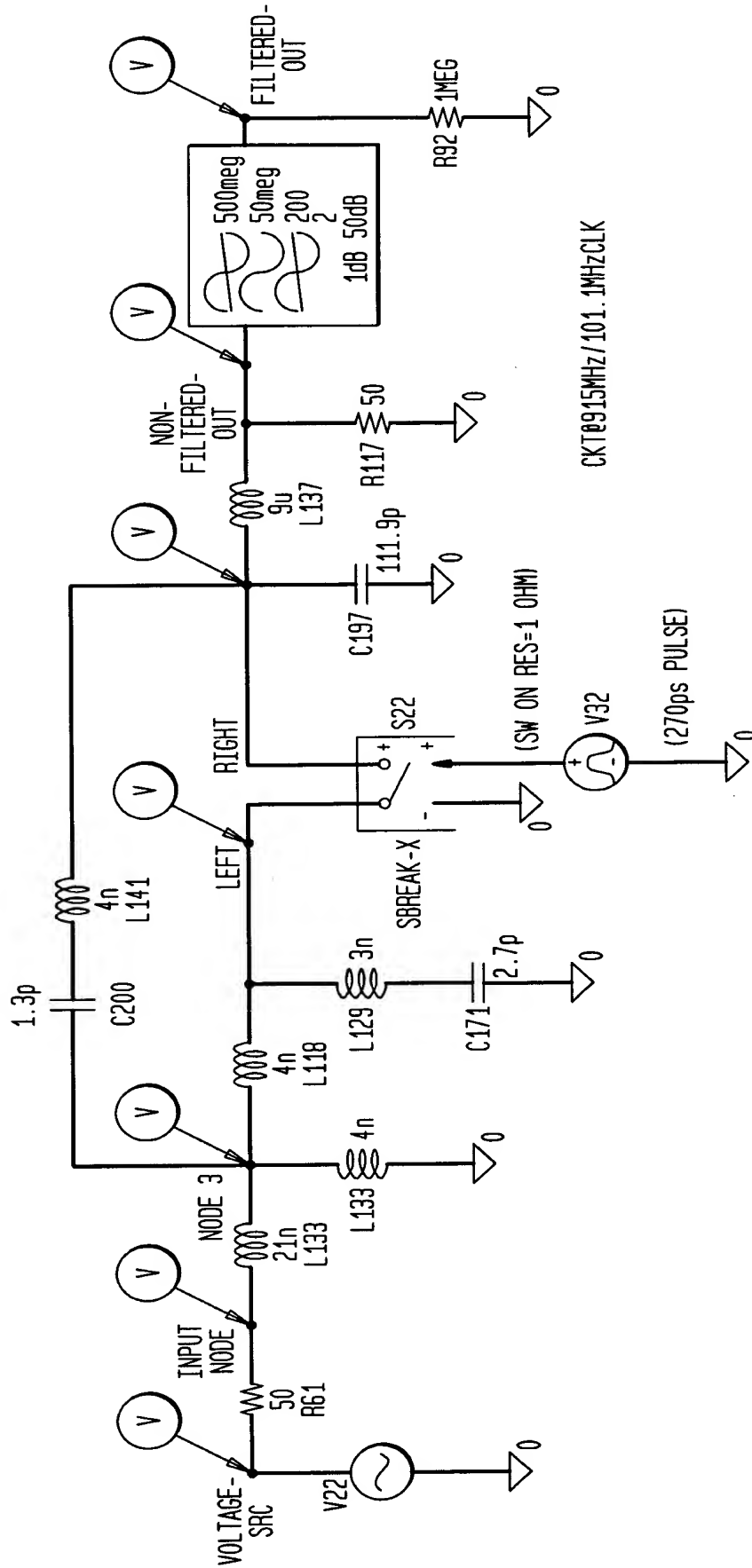




FIG. 94

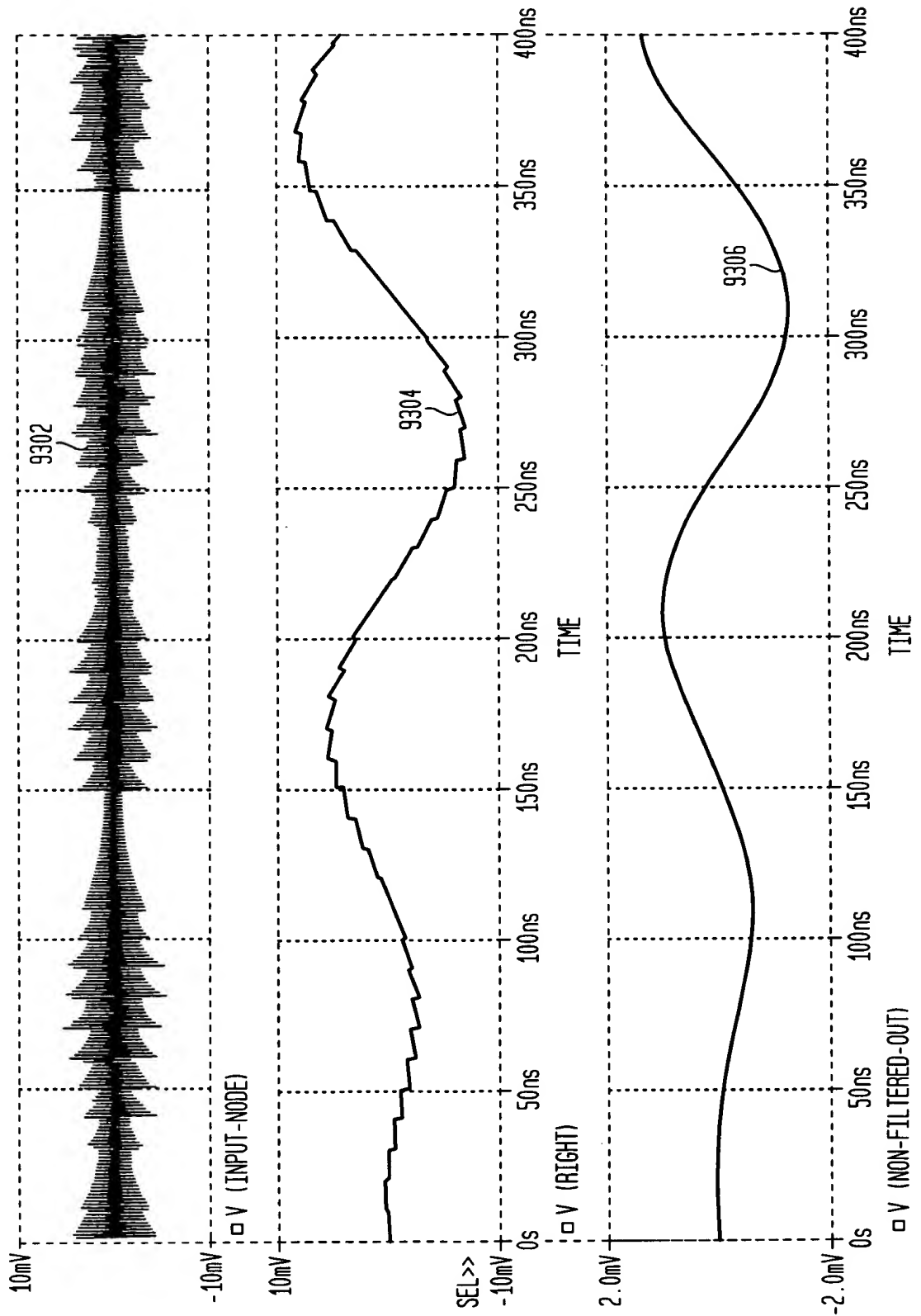




FIG. 96A

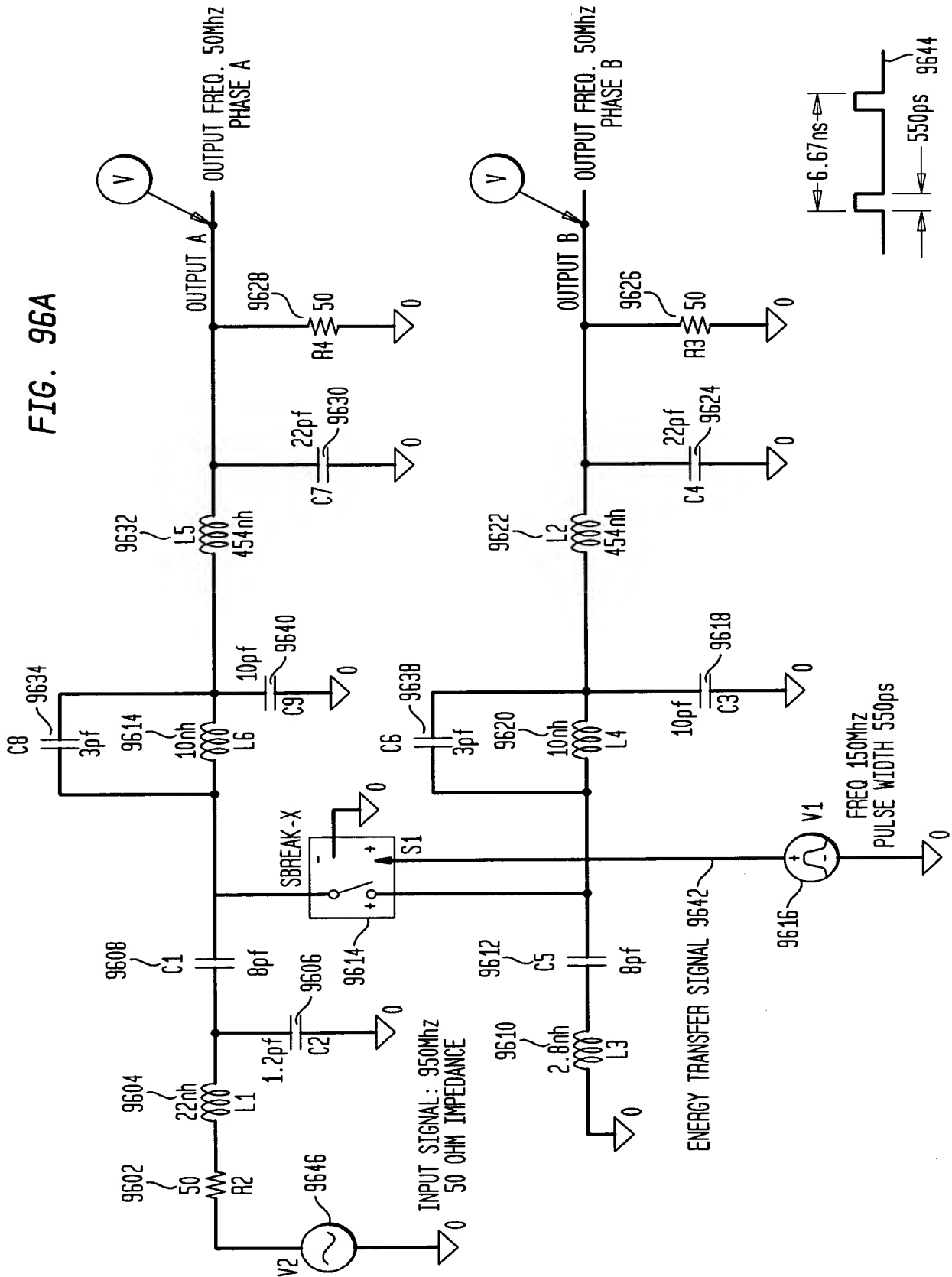


FIG. 96B

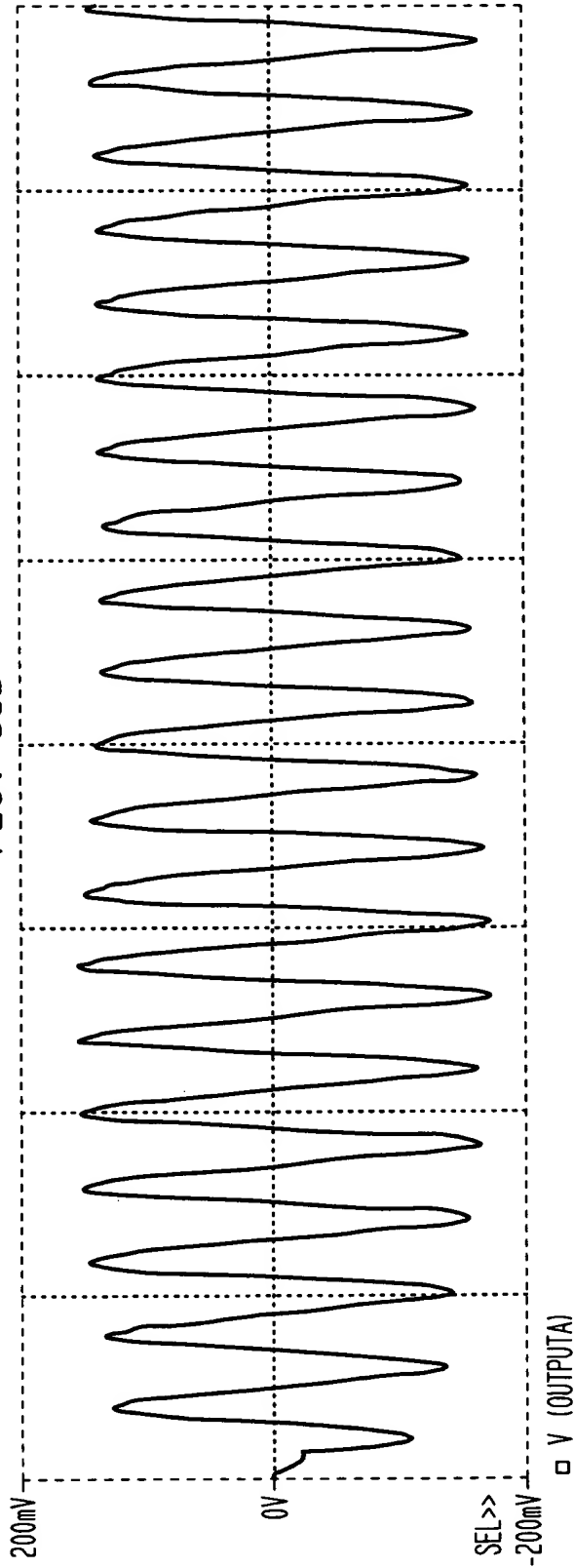


FIG. 96C

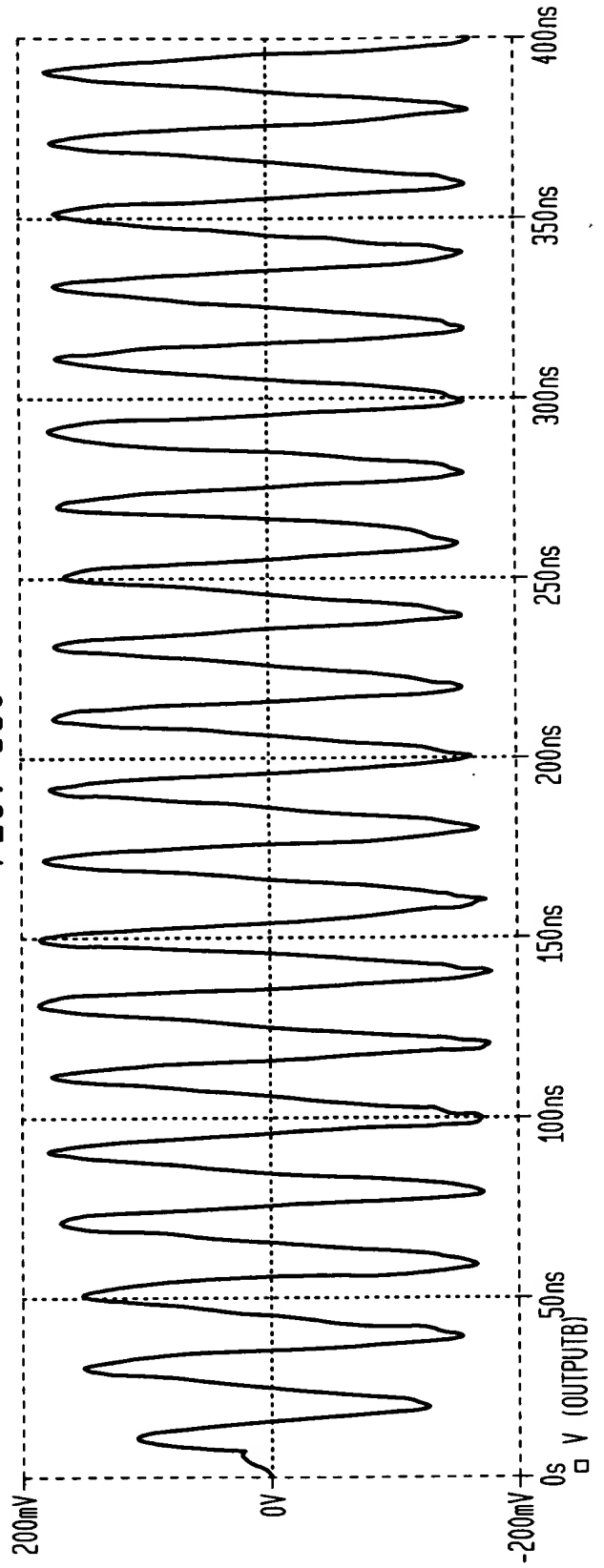


FIG. 97

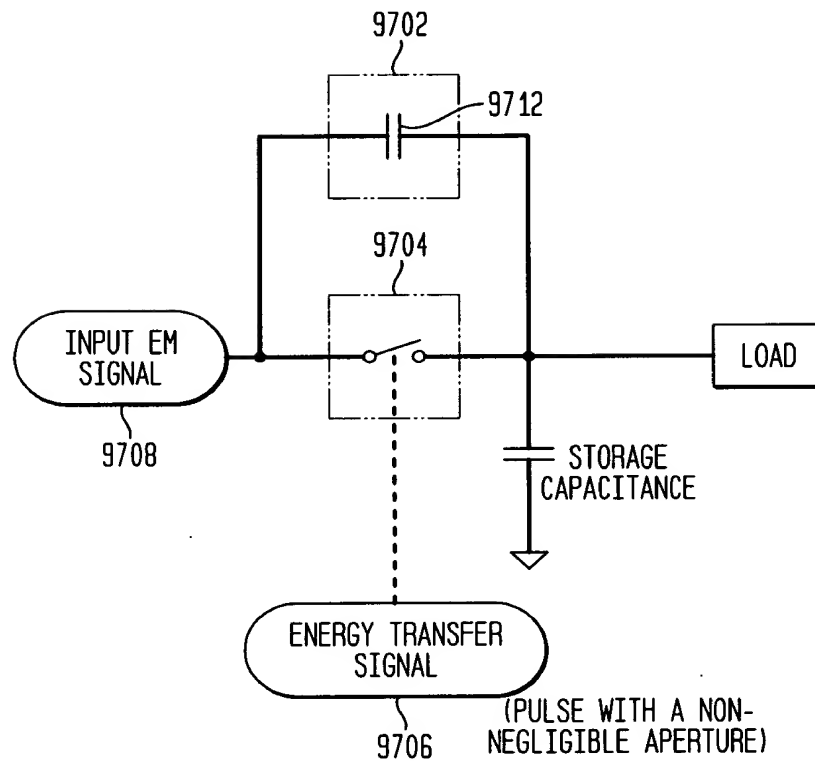


FIG. 98

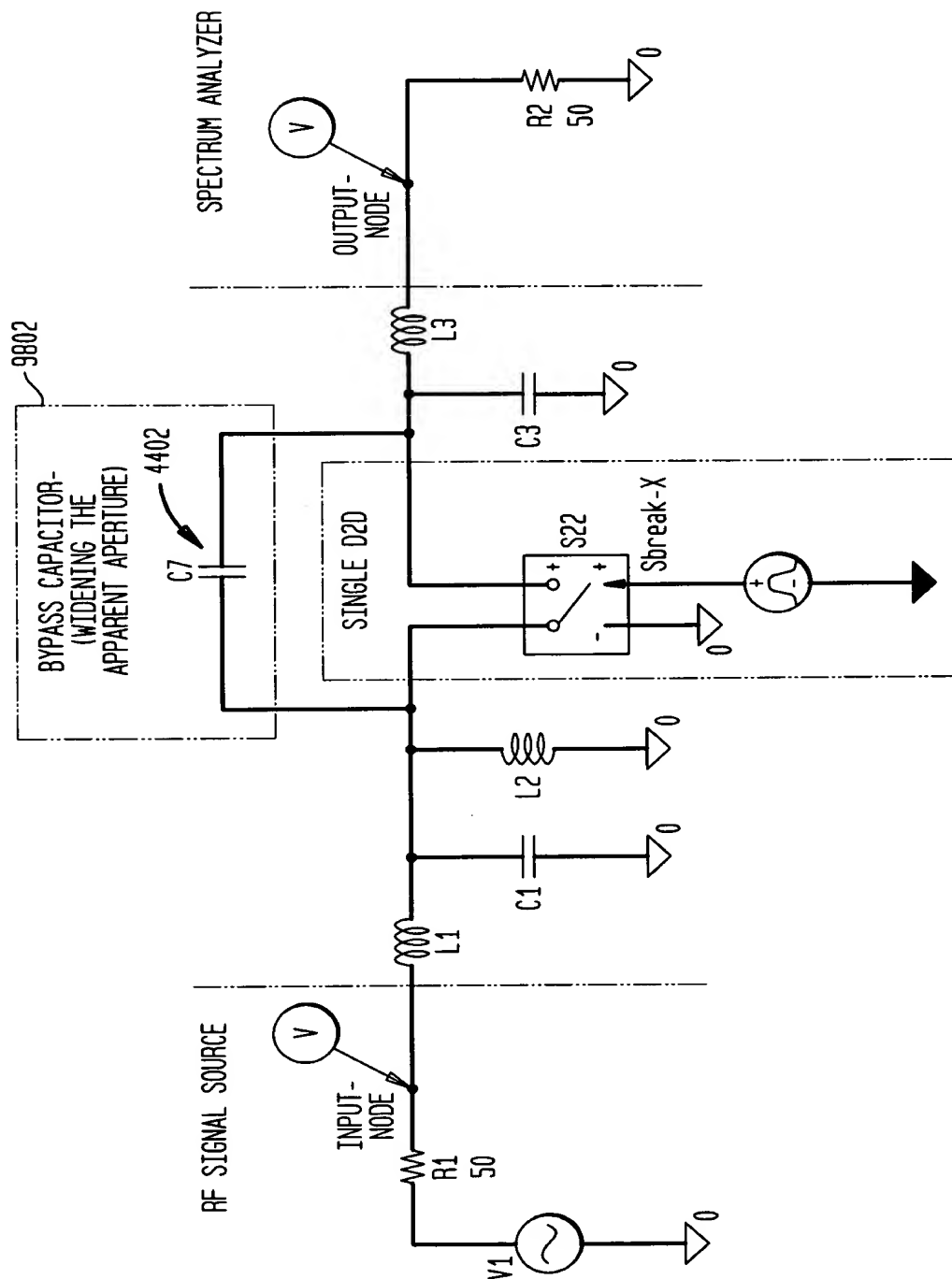


FIG. 99

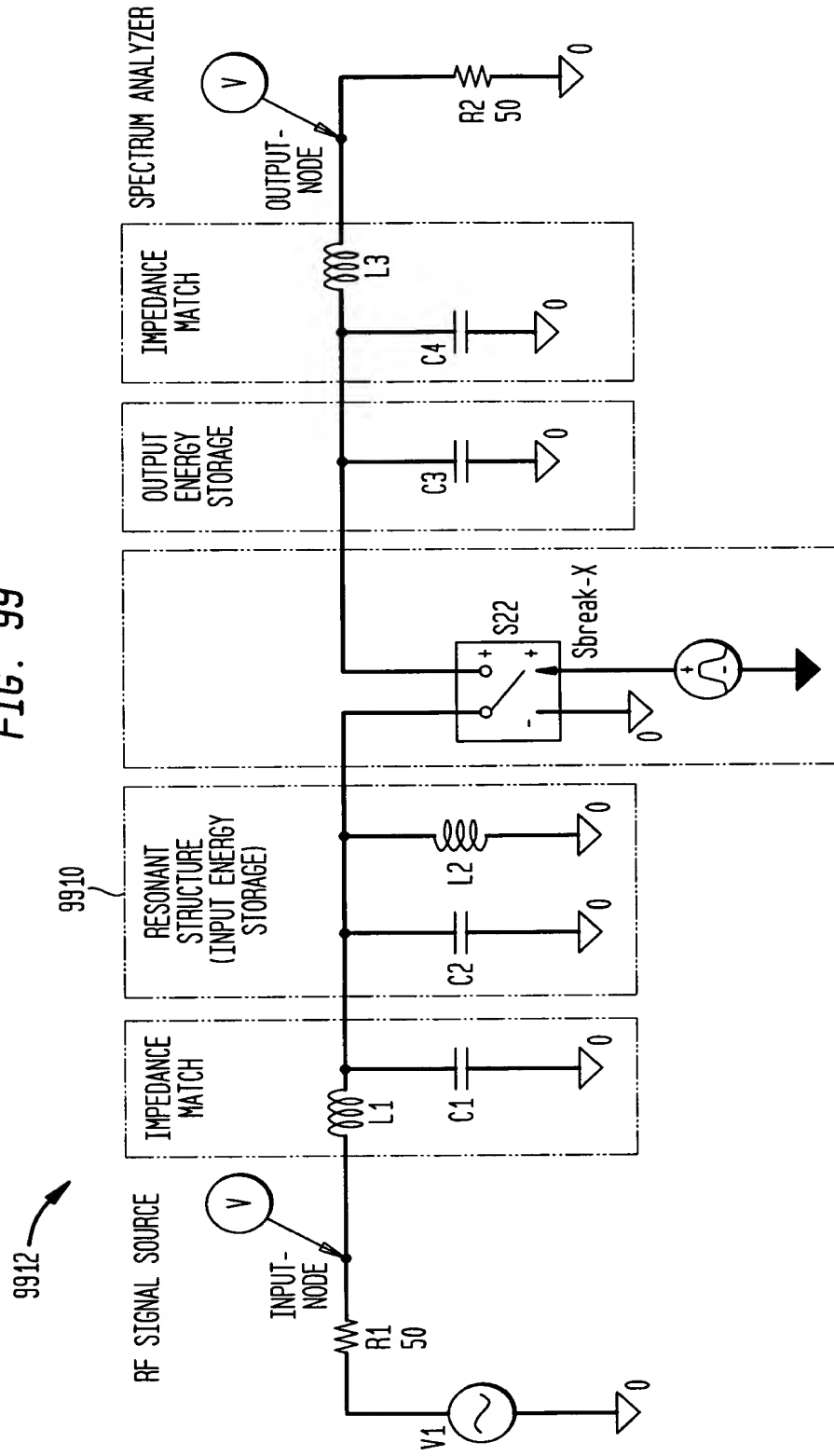
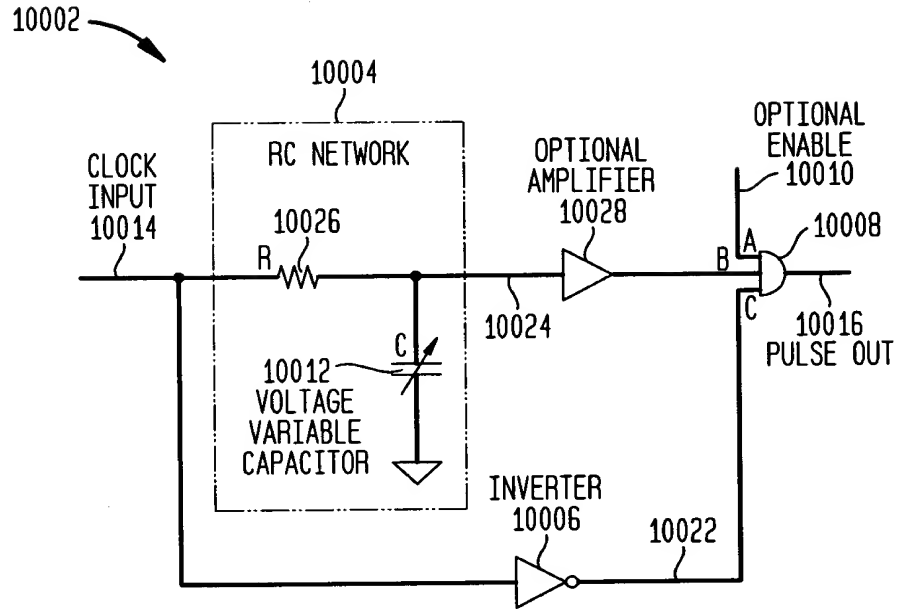


FIG. 100A





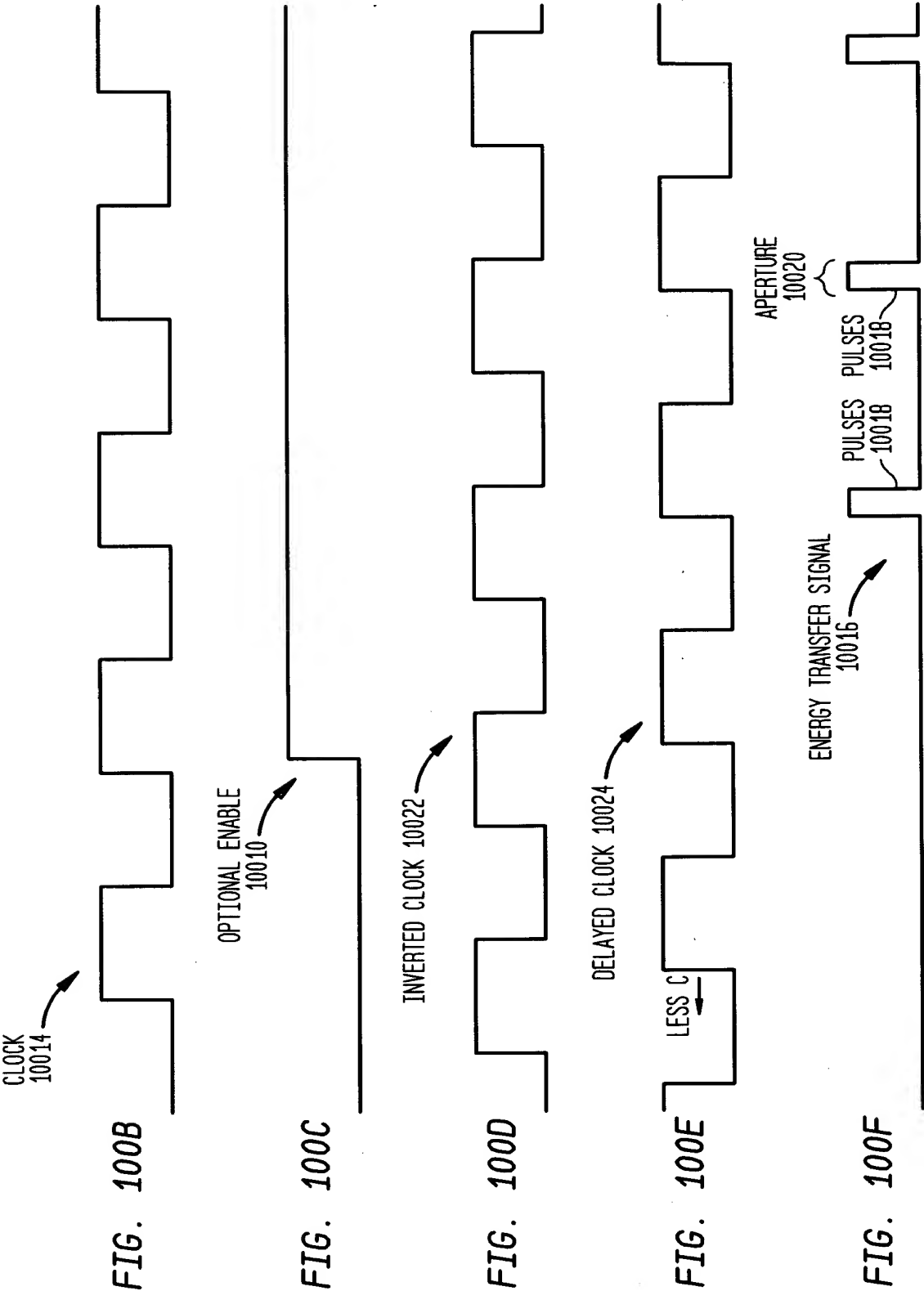


FIG. 101

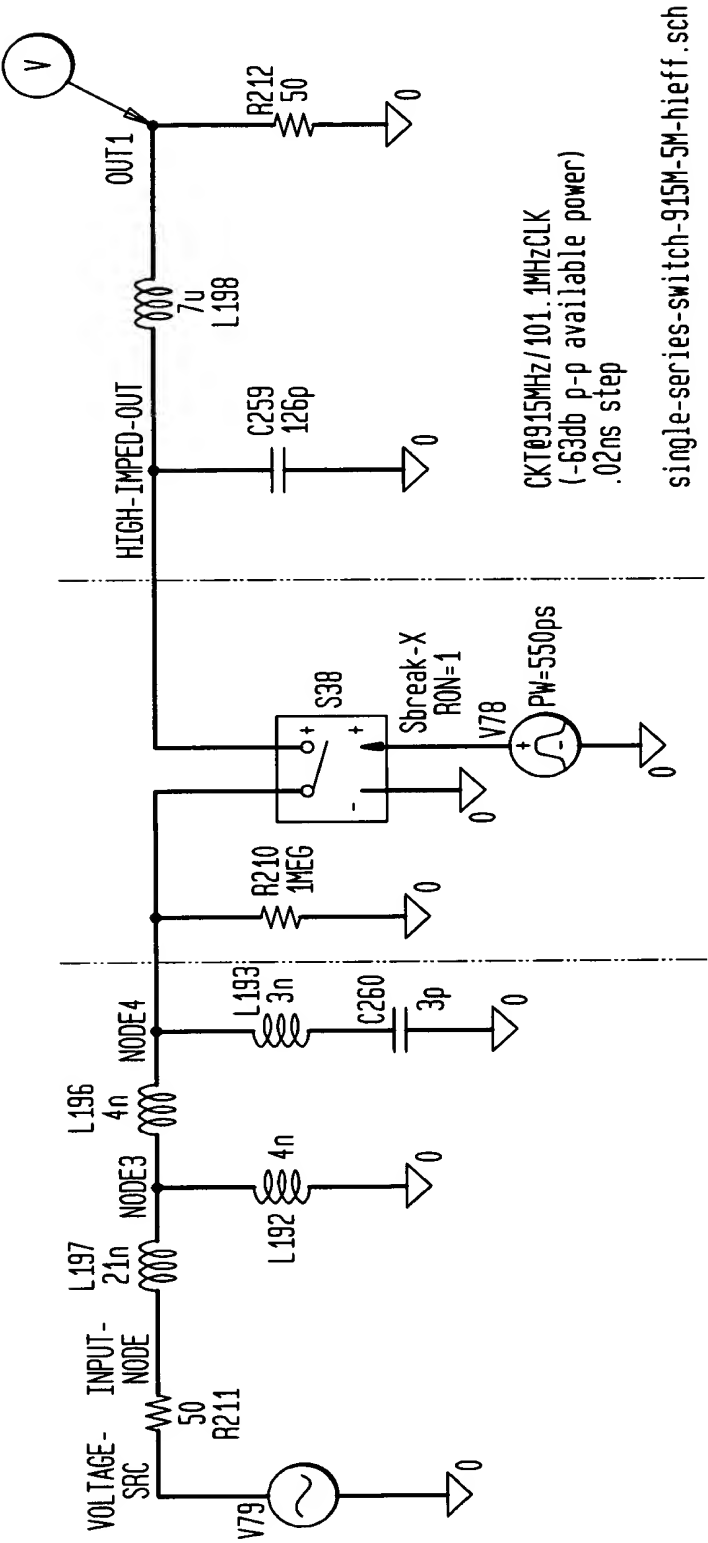


FIG. 102

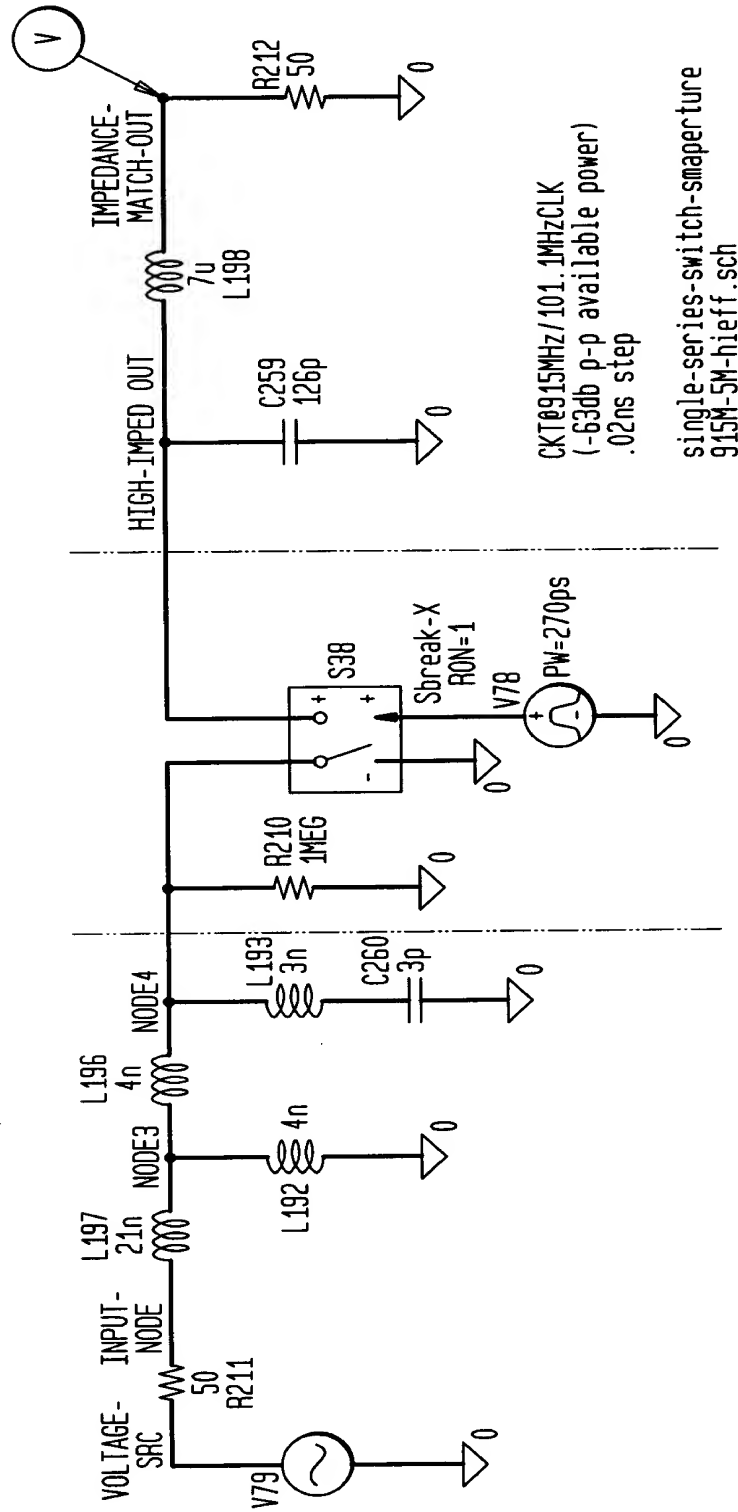
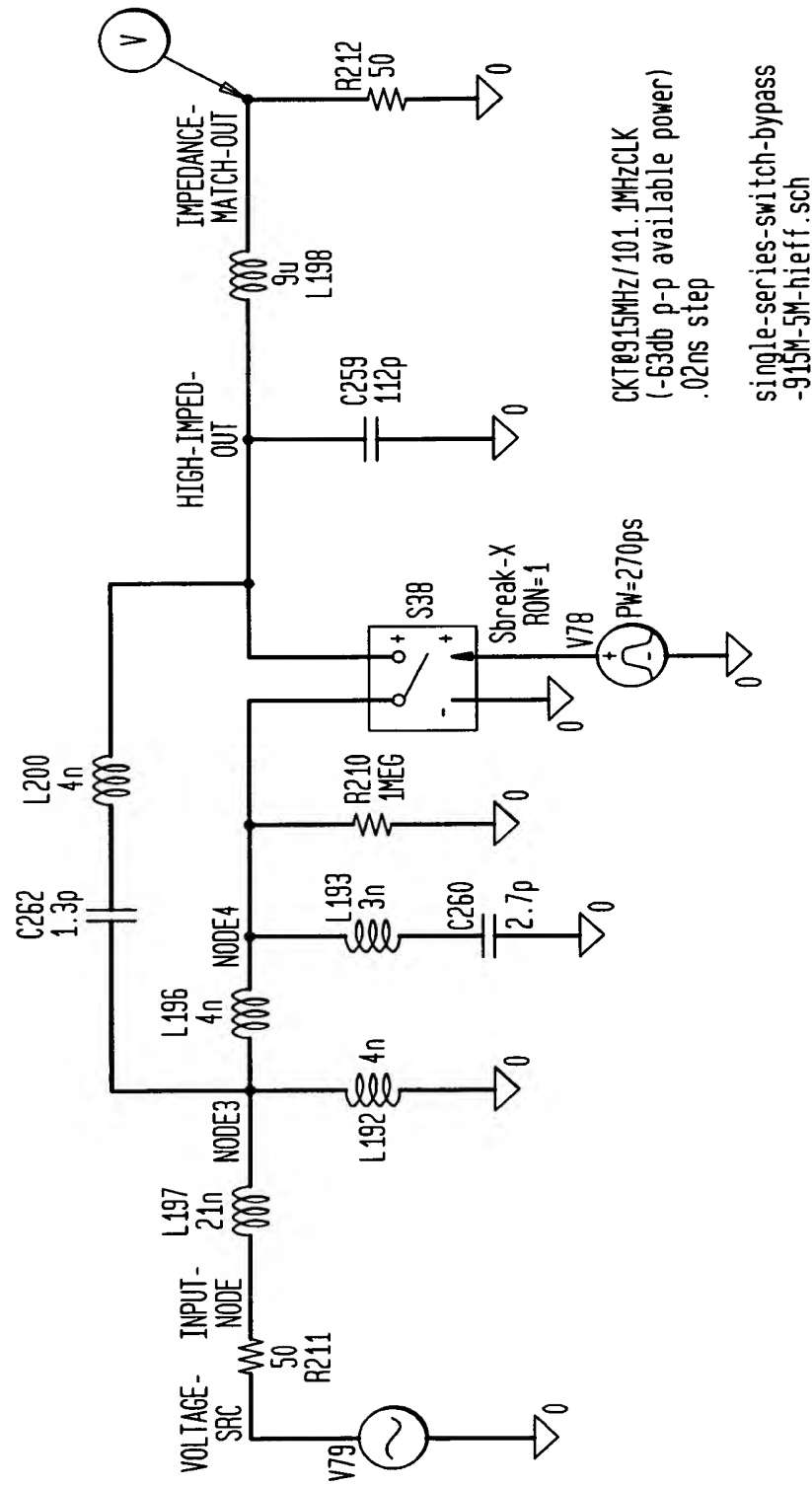


FIG. 103





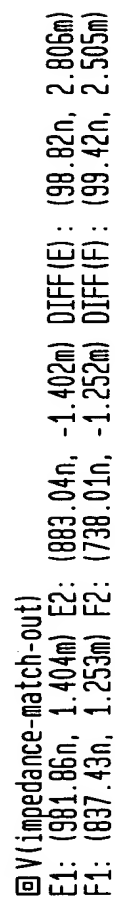
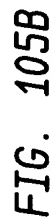
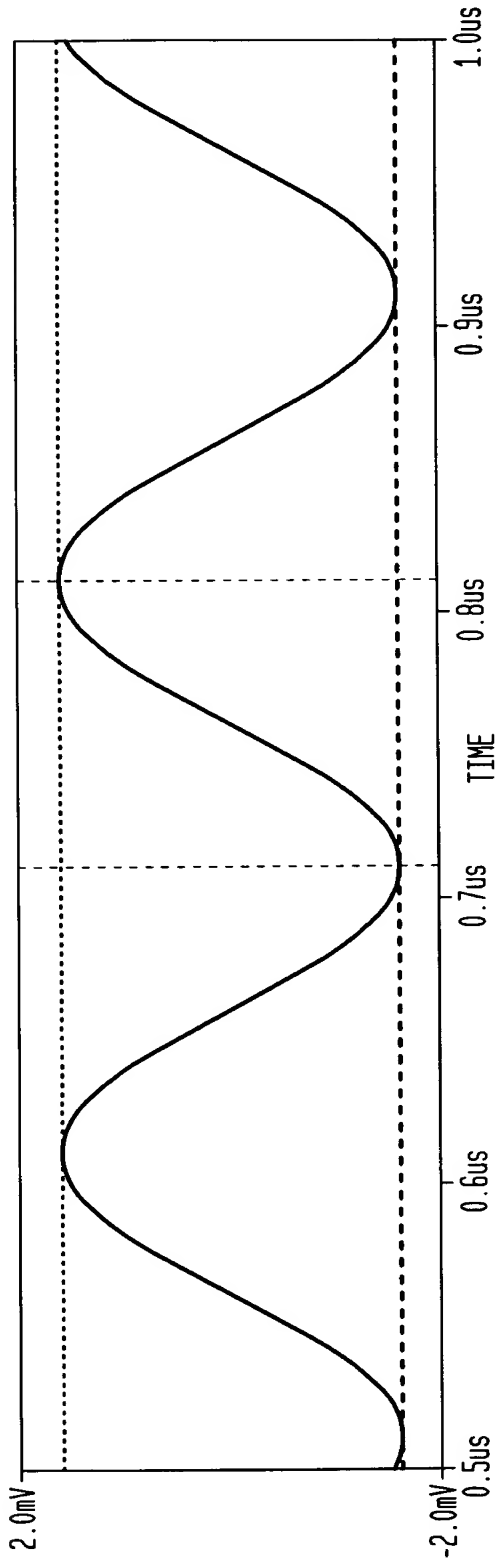
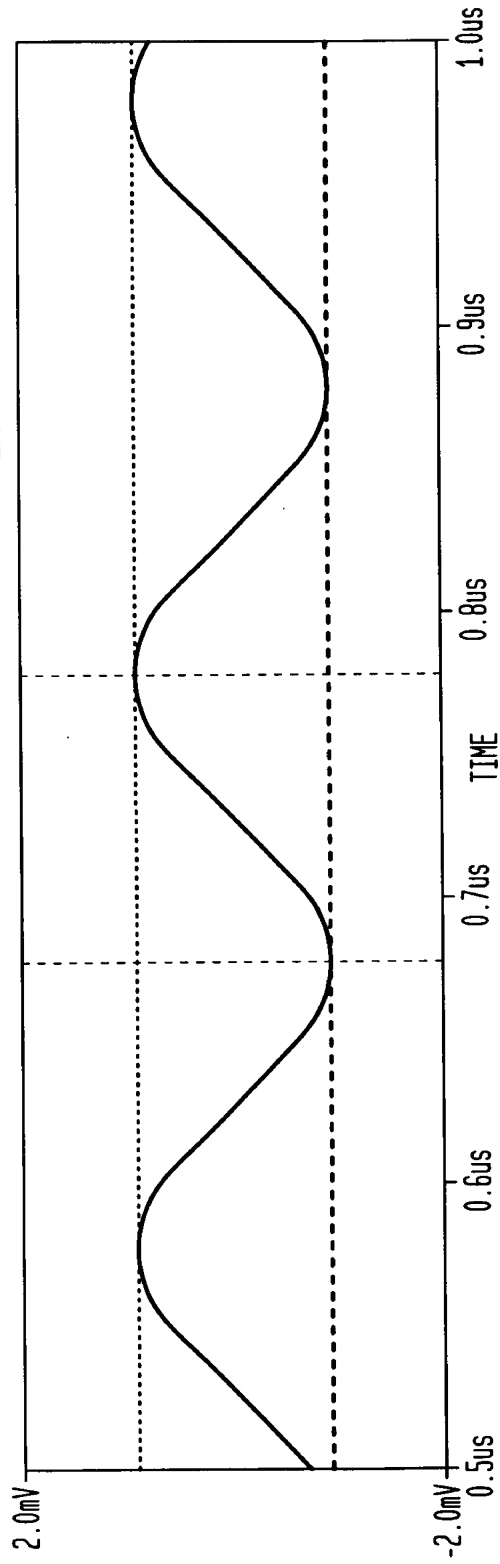


FIG. 106A

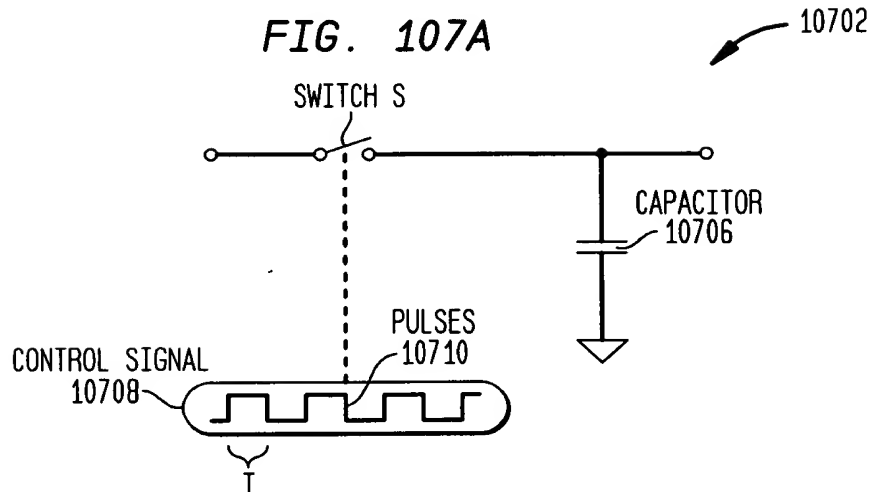


□ V(impedance-match-out)  
 A1: (810.53n, 1.642m) A2: (710.52n, -1.624m) DIFF(A): (100.01n, 3.263m)  
 B1: (777.78n, 942.32u) B2: (677.18n, -942.51u) DIFF(B): (100.60n, 1.885m)

FIG. 106B



□ V(impedance-match-out)  
 E1: (981.86n, 1.404m) E2: (883.04n, -1.402m) DIFF(E): (98.82n, 2.806m)  
 F1: (837.43n, 1.253m) F2: (738.01n, -1.252m) DIFF(F): (99.42n, 2.505m)



**FIG. 107B**

$q = C \cdot V$	EQ. 10
$V = A \cdot \sin(t)$	EQ. 11
$q(t) = C \cdot A \cdot \sin(t)$	EQ. 12
$\Delta q(t) = C \cdot A \cdot \sin(t) - C \cdot A \cdot \sin(t-T)$	EQ. 13
$\Delta q(t) = C \cdot A \cdot (\sin(t) - \sin(t-T))$	EQ. 14
$\sin(\alpha) - \sin(\beta) = 2 \cdot \sin\left(\frac{\alpha - \beta}{2}\right) \cdot \cos\left(\frac{\alpha + \beta}{2}\right)$	EQ. 15
$\Delta q(t) = 2 \cdot C \cdot A \cdot \sin\left[\frac{t - (t-T)}{2}\right] \cdot \cos\left[\frac{t + (t-T)}{2}\right]$	EQ. 16
$\Delta q(t) = 2 \cdot C \cdot A \cdot \sin\left(\frac{1}{2} \cdot T\right) \cdot \cos\left(t - \frac{1}{2} \cdot T\right)$	EQ. 17
$q(t) = \int C \cdot A \cdot (\sin(t) - \sin(t-T)) dt$	EQ. 18
$q(t) = -\cos(t) \cdot C \cdot A + \cos(t-T) \cdot C \cdot A$	EQ. 19
$q(t) = C \cdot A \cdot (\cos(t-T) - \cos(t))$	EQ. 20



FIG. 107C

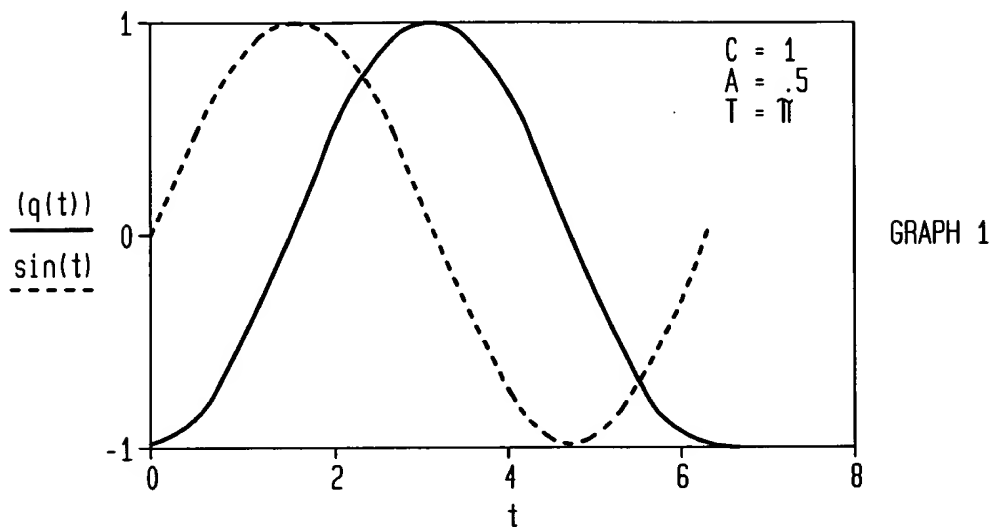


FIG. 107D

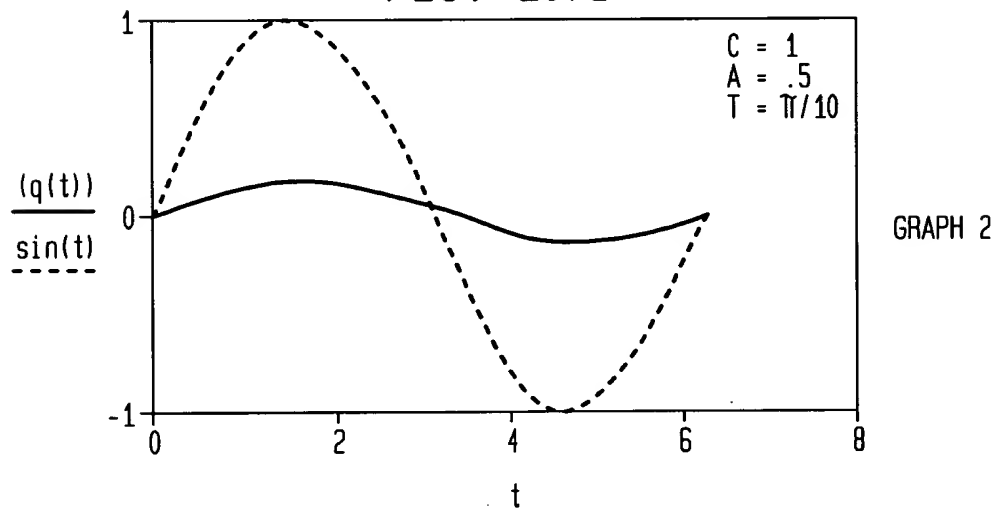


FIG. 107E

POWER-CHARGE RELATIONSHIP

$q = C \cdot V$  EQ. 21

$V = q/C$  EQ. 22

$V = J/C$  EQ. 23

$J = q^2/C$  EQ. 24

$P = J/S$  EQ. 25

$P = \frac{q^2}{C \cdot S}$  EQ. 26

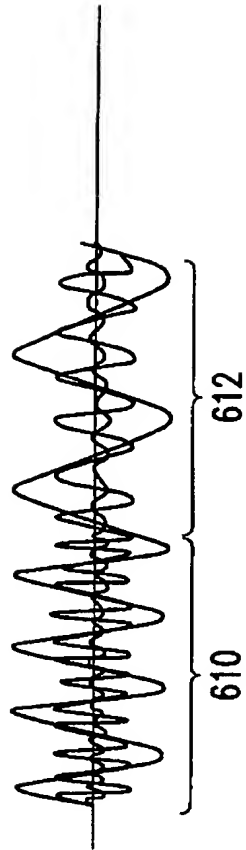
FIG. 107F

INSERTION LOSS

INSERTION LOSS IN dB IS EXPRESSED BY:

$IL_{dB} = 10 \cdot \log\left(\frac{P_{in}}{P_{out}}\right)$  or

$IL_{dB} = 10 \cdot \log\left[\frac{\left(\frac{V_{in}^2}{R_{in}}\right)}{\left(\frac{V_{out}^2}{R_{out}}\right)}\right]$



HARMONICS OF  
SIGNALS 610 AND  
612  
(SHOWN SIMULTANEOUSLY  
BUT NOT SUMMED)

FIG. 6H

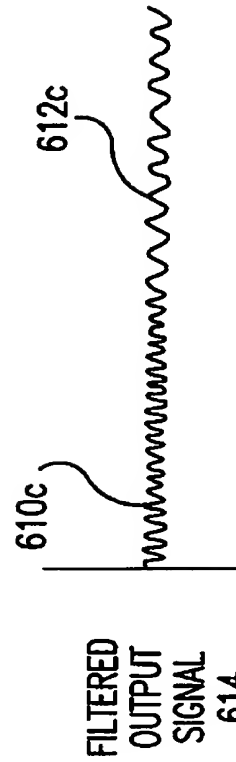
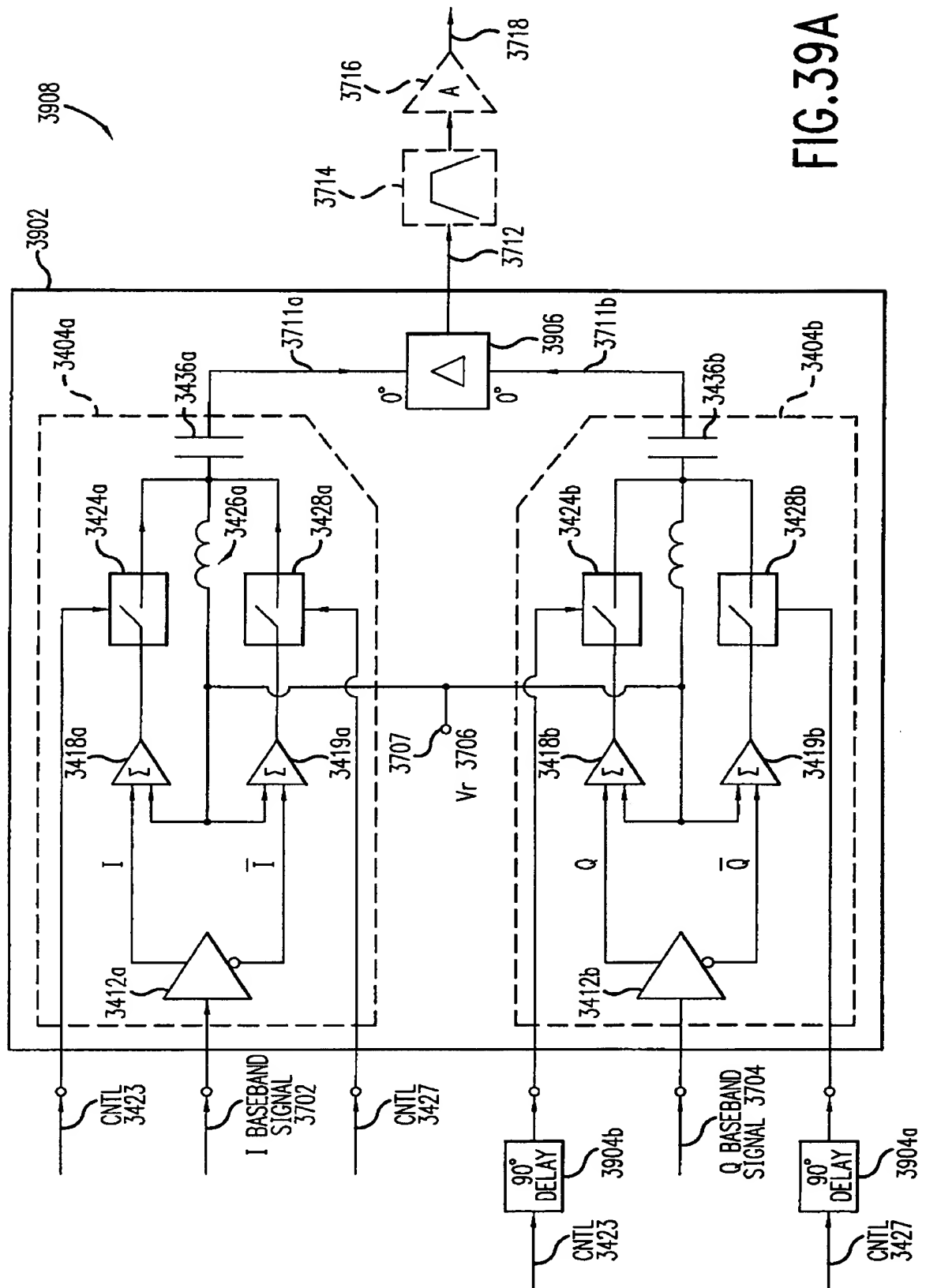


FIG. 6I



**FIG. 39A**

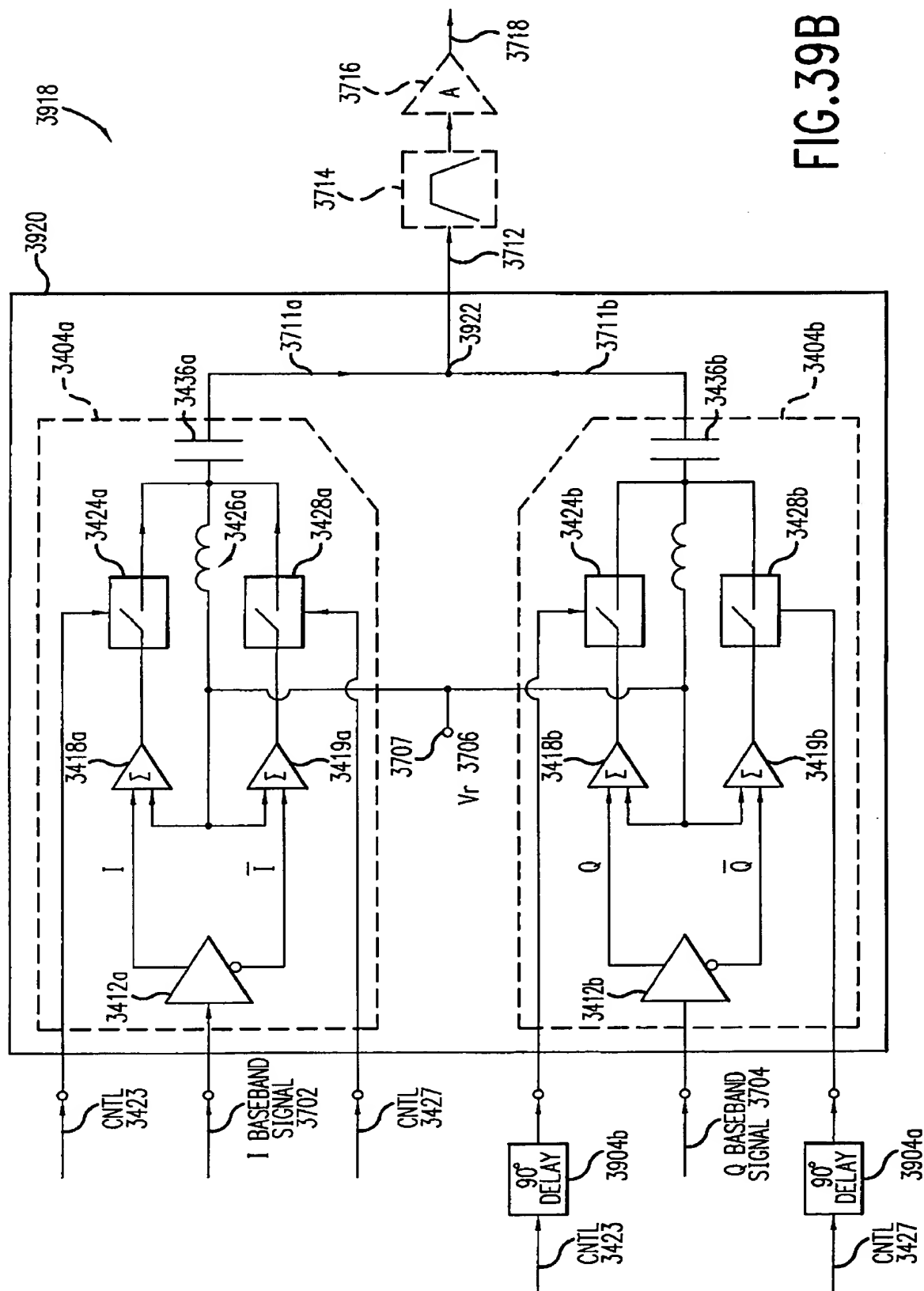


FIG. 39B

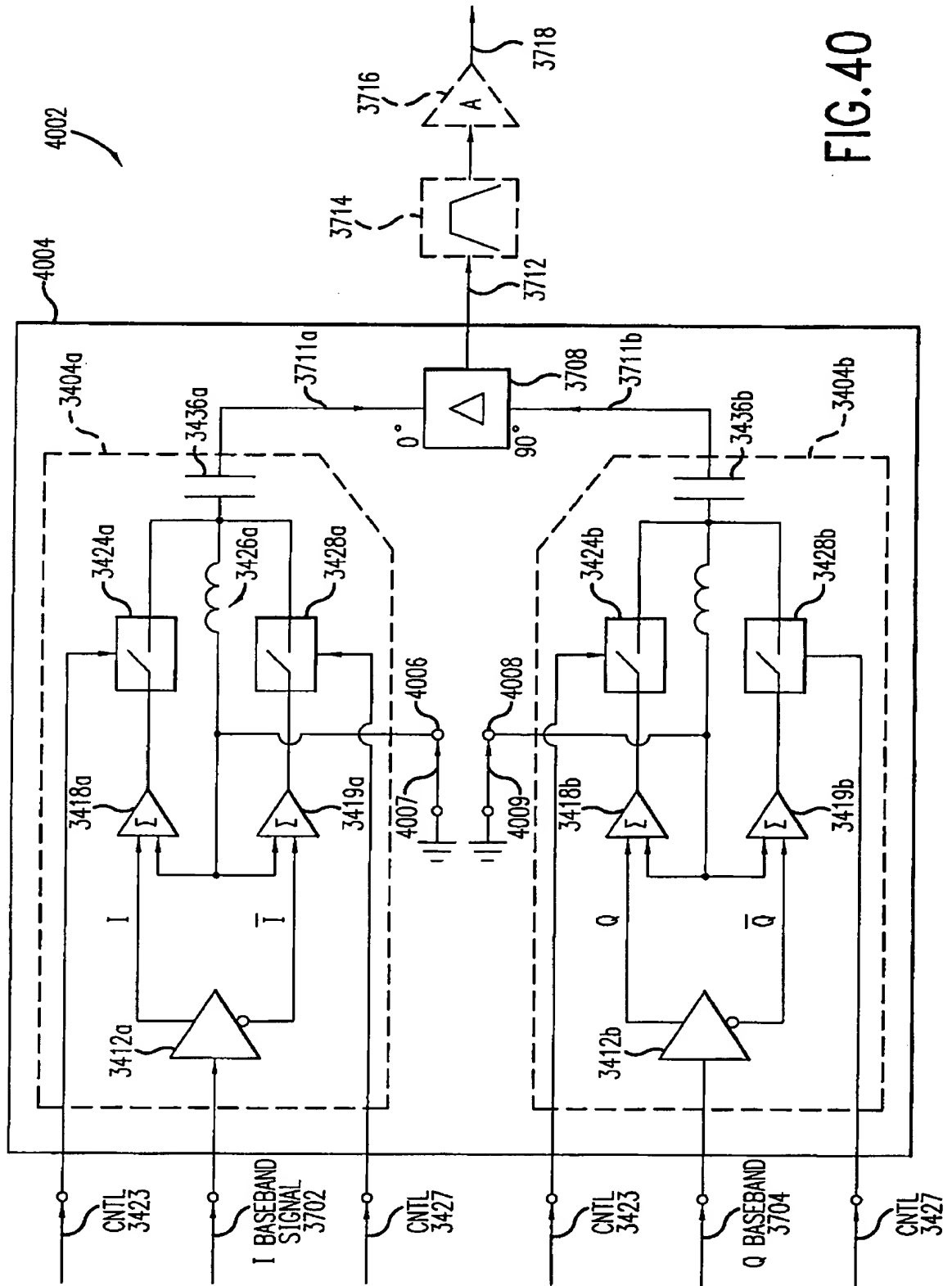
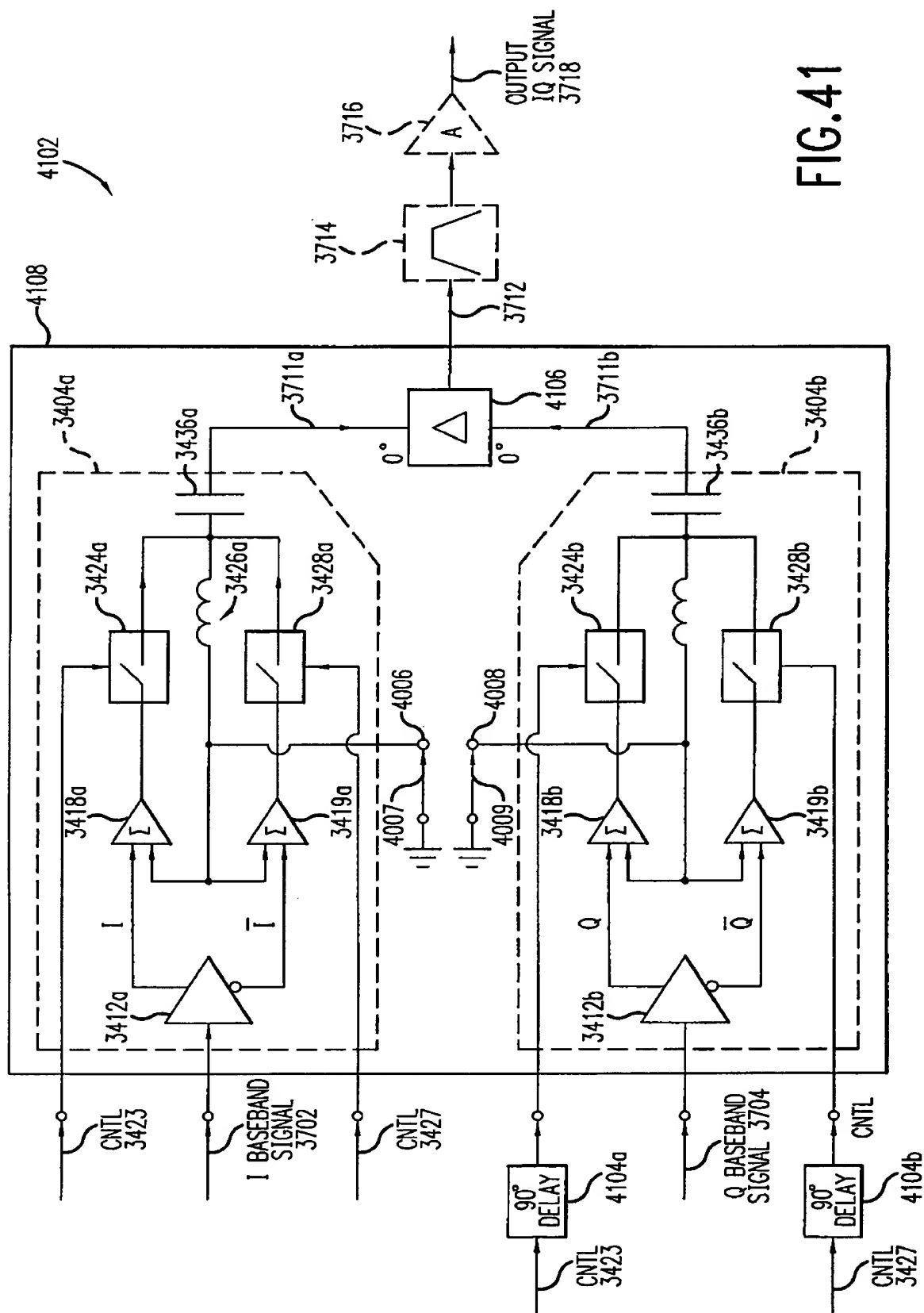


FIG. 40



**FIG. 41**

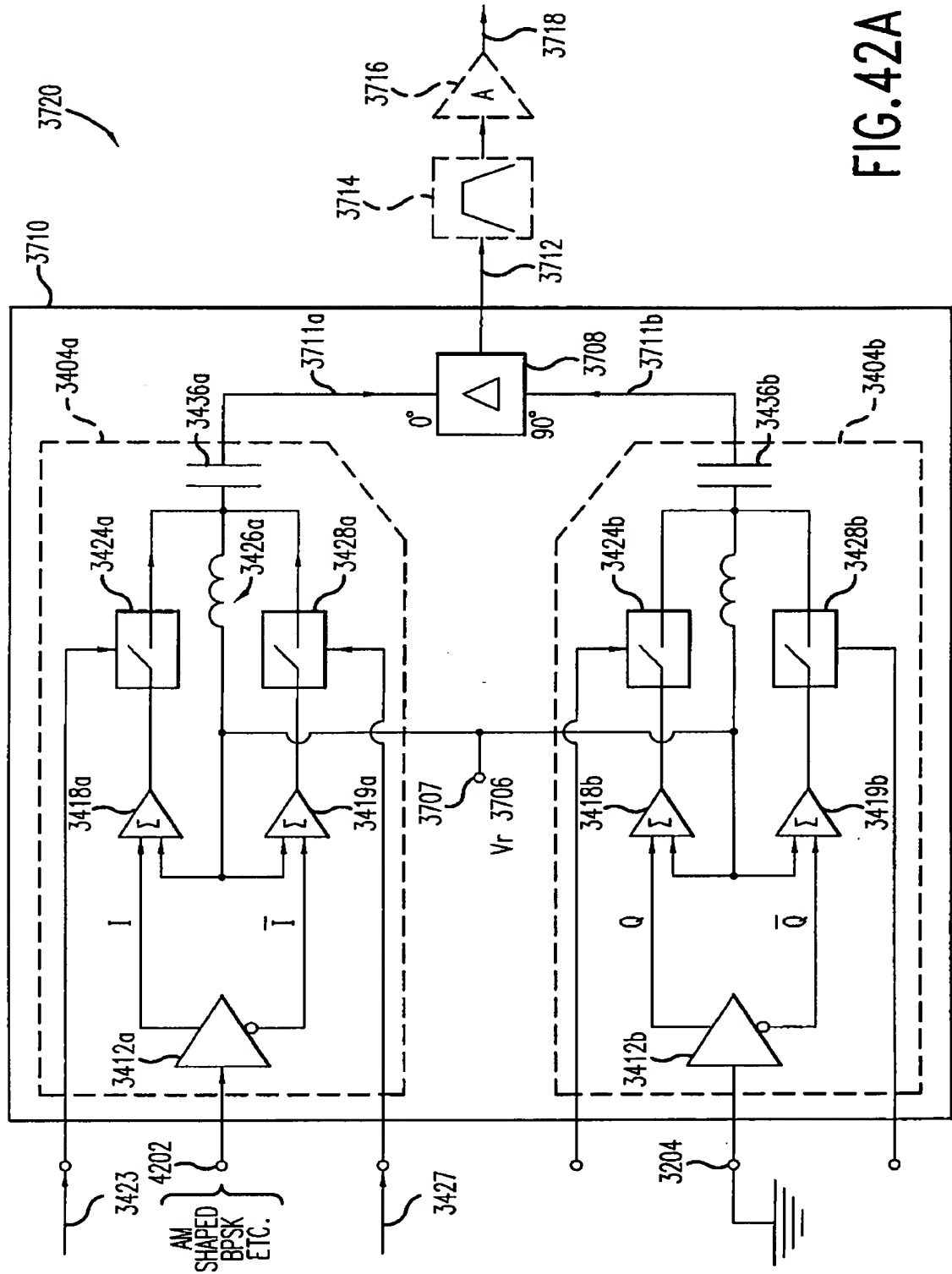


FIG. 42A

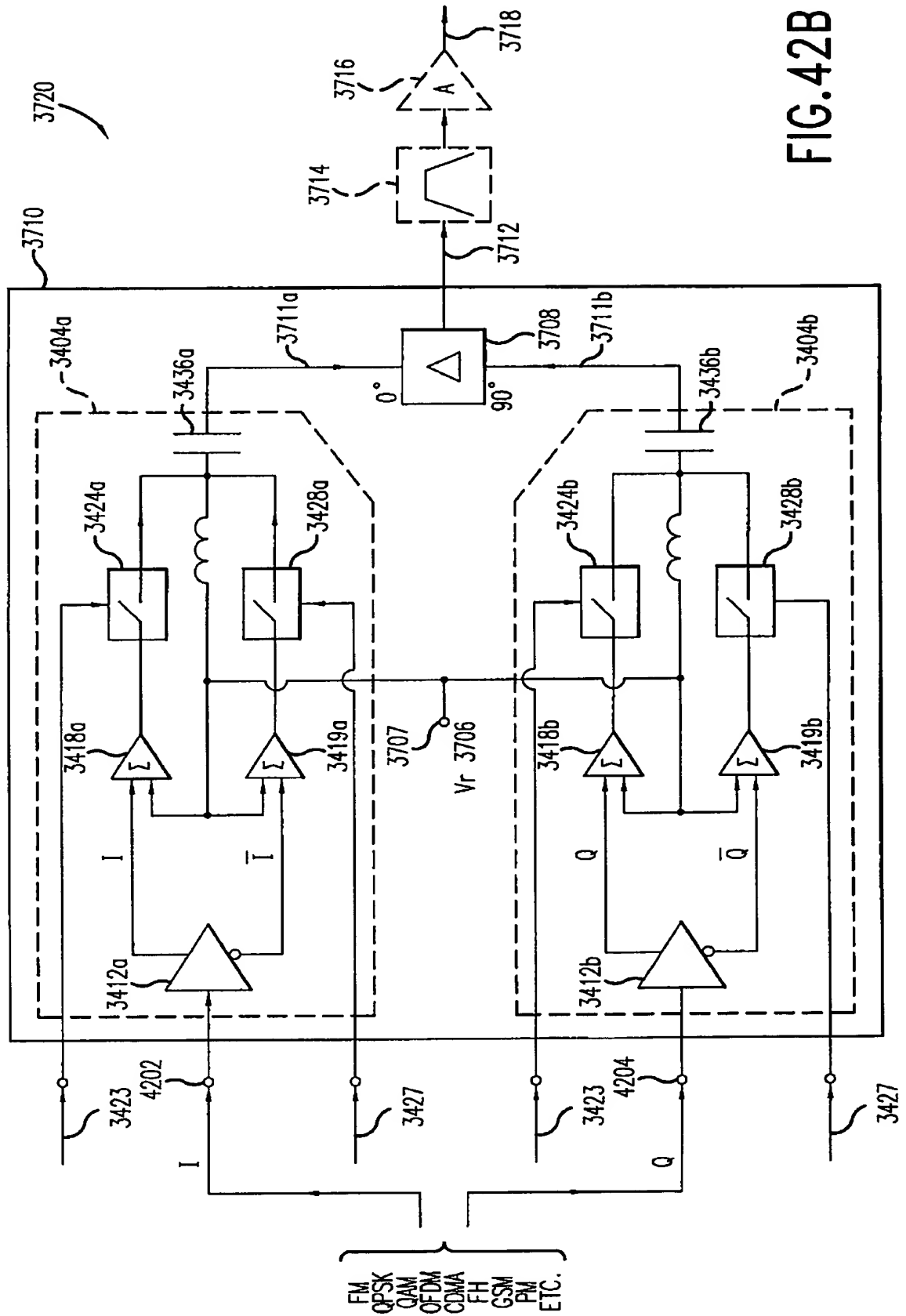


FIG. 42B